

# Can Deep Sea Water be Processed into Potable Water and Distributed into the Middle East?

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## ABSTRACT

The study will conclude with a way to develop institutional structures implementing Solow's conceptualization of inter-generalization that can collaborate peace and increase funds for quality water throughout the Middle East. The study integrates quantitative statistical data and defends the argument that every individual has the right to fresh quality drinking water. The study formulates a hypothesis to gain control, offers visibility into the water industry in the Middle East, and delivers reliable information.

Identify what the commonalities between different sectors were and where synergies lay in terms of governance paths (Tiller et al., 2021. P.1). The study is a quantitative, qualitative, and mixed methods approach that includes an e-mail chain, service partners, auditing, and project scope. Synergy and value are targeted with partnerships.

Communication of science is implemented to include theory, details, methods, and imperial results. The plan is to gain a comprehensive insight into indicators of water levels and quality with artificial intelligence and synthetic intelligence. Artificial Intelligence can rebuild itself (Capitol Technology, 2022. P.1).

Artificial Intelligence that can be transcended containment (Capitol Technology, 2022. P.1). Machine learning is exploding as an application of narrow AI (Artificial Intelligence), used to comb through vast amounts of data to better develop and market products (Capitol Technology, 2022. P.1). Cultural transparency will be investigated along with how the government manages reluctance and how they build strong relationships.

A focus is on building a network of founder's challenges facing our world today to demonstrate how interconnected we are and how the fates of all people are bound up together (President Biden, 2021). The outbreak of a virus overseas can cause profound grief and suffer at home (President Biden, 2021). Energy data will be reported to show key metrics and will be compared to countries in the Middle East and measured in amounts of water consumption and renewable energy.

"Questions such as these will be answered by world data," "how water is produced by renewable energy"? Conflict a continent away can create endangers our security (President Biden, 2021). Economic downturns abroad can mean lost jobs and shuttered businesses in towns across the globe (President Biden, 2021).

Global climate change worsens hurricanes in the Gulf, floods in the heartland, and wildfires in the West (President Biden, 2021). Because of global warming areas in the world are becoming scarce of potable water for a variety of reasons. Yet what is sure in the oceans is an infinite source of water that is not dependent on rainfall be used to provide potable water for all these drought-stricken regions.

## Processes:

(1) With a ship in the ocean pumping the deep ocean water to a purification system reserves osmosis, (RO) system on board and store in specially prepared containers. Or (2) A long pipe extending from the purification station on shore to the deep ocean where the water is recovered. The power for the RO unit can be supplied by wind turbines or photovoltaic. Water from the purification station is fed into the local distribution system. (3) which be an offshore wind turbine to supply the power and a pipe extending from near the turbine to a RO station on a floating platform (although anchored to the seabed). Water is then delivered to containers on a ship or pumped to shore.

A detailed engineering analysis of all three options is needed to decide which method is the most cost-effective and the potential seating locations. Initial potential locations are Dubai or Taiwan. The company has requested over 100 orders of this water and a consortium of supermarkets, as well. As a first step, my company is looking to collaborate with a partner to perform a feasibility analysis to determine which method will be the least costly to implement, have the secured payback in terms of selling the potable water, and have the largest long-term profitability. It will depend on the location of the demand. Assuming the initial analysis shows the feasibility of at least one location to be cost-effective, move to the development of a prototype at a selected location. Because potable water is always

supplied through some municipality or other government agency, we envision a public-private partnership for this phase.

### ***Intended Audience***

Leading Corporations, Innovators, Investment Managers, Companies Raising Capital, Wealth Advisors, Independent Scientists, Research Centers, Universities, Governments, Institutions, Water Dubai Industrial, Independent Sponsors, Islamic Financial Market, Governance Indicators, Businesses in the Arab World, Professors, Deans, Ministries, Authorities, Engineers, Foreign Holdings, The General Reserve, Monetary Agencies, Scholars, and Sovereign Wealth Fund Institutions.

The study gives a historical comparison and uses the Ad Hoc theory implementing when necessary. The author is discussing how we can reduce evaporation as this increases the amount of water being produced. There is a more substantial cost with producing water from the air.

There is also an abundance of panels that are required. Desalination is not new; it has been around since the '70s. The study shows that the Middle East will increase the water supply and have a cost available at .88 percent, which comes from desalination plants, which is much higher than what households and businesses pay for it (MENA, 2021.p.1).

On current plans and projections, Bahrain will be able to increase desalination capacity to meet municipal water demand by 2030, but that will entail heavy financial, economic, and environmental burdens (MENA, 2021).

### **1. Introduction**

The study will investigate extramural support, Shared Equipment Authority for quality water distribution. The indicators are implemented to prove water distribution is needed for well-being and improve social challenges of the Middle East. Former United Nations Secretary-General Ban Ki-Moon, warned: 'extreme weather events continue to grow more frequent and intense, in rich and poor countries alike, not only devastating lives but also infrastructure, institutions, and budgets—an unholy brew that can create dangerous security vacuums' (United Nations, 2011), (Ide, Lopez, Frohlich, Schffran, 2021p. 569). International governments should be aware of local conflicts to open the pathway to more resources and try to appease the water industry with regulation.

The feasibility study examined alternatives for producing freshwater, one from the sea on a ship and one from a pipeline, and a conversion land-based and included no-project results. There are advantages of working in the Middle East, Dubai, Taiwan, and the Emirates. There will be an offshore pipe with a filter to keep out any debris and it will be far enough out so they can reach it.

The current state-of-the-art equipment in the water industry is investigated along with the latest developments towards implementing or upgrading the system. A focus is on the equipment being able to reject salt in a way that is cost-effective and non-toxic. That is connected to a pump size the knee meets the needs of the recipients of the water. The Reverse Osmosis system distributes water to the domestic water supply system. Financial arrangements, the breakeven timeframe, and how much money is needed to build this with an engineering firm to work will be presented. Most of the water today is supplied by private companies.

Up to now, most of the related literature was about the conceptual design, theoretical analysis, and there conceptual schemed proposed for hydrostatic pressure-driven RO desalination, I.e., the submarine, desalination plants, underground plants, and mountain-foot plants (Cui, Ma, Wu, Lu, Fan, 2021. P.1). The study will investigate the information of the needs in terms of water usage per hour or per day which will assist in making decisions on the size of the equipment.

A & E companies will be scouted that specializes in water and wastewater treatment and purification facilities. A spreadsheet with revenue and expenses for three years' year 1 by month, and the next 2 years by quarter. All the capital investments are started and enumerated. All expenses will have a line. Vision 2030, Global Networking & Siren De will be presented as case studies. Oil transitioning to water will be highly monitored showing the effects of the transition as Saudi Arabia has built most of its wealth from oil and gas.



(Weinert, 2020)

### The Red Sea-Dead Sea Canal Project

The study includes Global marketing, Siren De and Deep-Sea Water Company's teams, Deep Sea Water technology, and experts in California. Biofouling and brine are investigated as some of the most serious issues associated with desalination. The study will give an overview of companies, consumption, infrastructure, and infographics. The Red Sea high-profile joint project agreement in the Middle East has been set in place for 2030. Quantitative studies were performed using surveys, experts, case studies, and sample models to exhibit an effective distribution of quality deep-sea water. A comprehensive understanding of the independent and dependent variables was presented.

Desalinating techniques are the most favorable. That is due to the simplified process of removing salts that conventional treatments are not capable of completing. New standards are being enforced to protect wildlife and marine life and create a more sustainable environment.

### Background of Study

Data networks, relationships, partnerships, experts, and wealth integrate and design a system to make quality water a global interest. Vision 2030 promises a transformation of Saudi Arabia's economy. And the financial sector will be crucial to achieving this (Schulkes, 2021.1).

The sector will facilitate private investment focusing on small and medium-sized enterprises (SME) financing. Fund mega-projects and be a driver diversifying away from oil (Schulkes, 2021. p.1). As a result, banks must go from being disruptive and passive to developmental and active (Schulkes, 2021, p.1).

Commercial banks are becoming financial intermediaries between all facets of the Saudi economy, not only the state and large conglomerates (Schulkes, 2021.p.1). The new banking environment requires updated approaches and since Saudi companies - with a few notable exceptions- do not borrow abroad, the domestic banking system is a critical source of funding for Vision 2030, (Schulkes, 2021.p.1). Between 2013 and 2030, this result in cumulative costs of \$11B and consume 15.9 billion m<sup>3</sup> of Bahrain's gas-driving competition for limited gas resources between industrial and municipal sectors as well as emitting millions of tons of carbon dioxide (CO<sub>2</sub>) (MENA, 2021).

The costs of municipal water supply in Bahrain, revising Bahrain's municipal water tariff structure help conserve water, enhance cost recovery, and contribute to achieving social equity among water consumers (MENA, 2021).

### **Water Produced by Air**

Here we use regional hydrologic and techno-economic simulations of solar PV panels covering California's 6350 Canal network, which is the world's largest conveyance system and covers a wide range of climates by an average of 39+12 thousand m<sup>3</sup> per kilometer of canals (McKuin et al., 2021, p.1). We find that over-canal solar reduce annual evaporation by an average of 39+12 thousand m<sup>3</sup> per kilometer of canals (McKuin, et al., 2021, p.1). The net present value (NPV) of over-canal solar exceeds conventional over-ground solar by 20% to 50%, challenging the convention of leaving canals uncovered and calling into question our understanding of the most economic locations to locate solar power (McKuin, et al., 2021, p.1).The SOURCE Hydropanels work by using solar energy to condense drinking water from moisture in the air (GWI, 2020). They are not the only atmospheric water generators on the market, but they are unique in being entirely solar-powered, allowing them to operate independently of any infrastructure (GWI, 2020). According to the AHO, between December and March, each hydro panel produced an average of 3.8 liters of water a day (GWI, 2020).

In March, the 48-panel array delivered a total of 2, 123 liters (GWI, 2020). Therefore, in each month, up to 42 times more water is transported by a truck than produced by 48 hydro panels (GWI, 2020). Bulk water is cheaper too (GWI, 2020). Highet told GWI that he pays A\$4,000 for 22,000 liters (about the volume of a large U-Haul truck) of water in 10-liter boxes from a supplier (GWI, 2020). That works out at approximately US\$0.12 per liter (GWI, 2020). Hydro panels, bringing the cost to approximately \$70,000 (GWI, 2020). Still, this is a significant upfront capital investment for a service that will only be useful during temporary periods of crisis (GWI, 2020).

Water produced by the SOURCE Hydro panels is dependent on local environmental conditions of relative humidity (RH) and solar energy (KWR) (SOURCE, 2020). SOURCE performs predictive analytics to predict water production in any area of interest (SOURCE, 2020). On average, each Hydro panel produces 90-150 liters (about twice the volume of a mini-fridge) of high-quality drinking water per month (Source, 2020). SOURCE water brings quality and sustainability together- no pipes, no grids, no electricity all made possible with SOURCE Hydro panels (SOURCE, 2020). A two-panel array costs around \$6,000 and produces around 7.5 liters of water per day (GWI,

2020). Amortizing that cost over 15 years gives a water price of \$150/m<sup>3</sup> - 124 times the global average cost of tap water (GWI, 2020). A decision on ultimate feasibility weighs all options, said McPhail (World Bank, 2010). For example, current estimates are that the project is a net consumer of energy in the order of 250MW, according to David Meehan the engineer who heads the feasibility team (World Bank, 2010). “The power demand for the proposed project will be updated as the work evolves,” he said (World Bank, 2010).

Currently, we are looking at 250MW but that change and of course, energy demand will be a factor in the overall feasibility (World Bank, 2010). Although the work was carried out in the lab, the finding is the first to show that migrating zooplankton - or indeed any organism - can create turbulence on a scale large enough to mix the ocean’s waters (Adams, 2018.p.1). This multiplies the brine. The work alters the way ocean scientists think about global nutrient cycles like carbon, phosphate, and oxygen, or even ocean currents themselves (Adams, 2018.p.1).

**Table 1.** Alternative Methods of Technology

<b>Vessel</b>
<b>Solar Power Plant</b>
<b>Wind Power Plant</b>
<b>A Battery Storage System</b>
<b>Sewage Treatment Plants</b>
<b>Collecting Water from Air-Extracted by Condensation</b>
<b>Pumping-Pipeline</b>
<b>Marine-Ships</b>
<b>Desalination-Reverse Osmosis</b>
<b>Bottling-Plant Construction</b>
<b>Supply-Chain</b>
<b>Logistics-Packaging Distribution</b>
<b>Mineralizing Rivers</b>
<b>Drilling into the Ground</b>
<b>Underground Reservoirs</b>
<b>Extracting Water from the Air</b>
<b>Onshore</b>
<b>Offshore</b>
<b>Municipal and Solid Waste Plant</b>
<b>Primary Networks/Hubs</b>
<b>Infrastructure &amp; Facilities</b>
<b>Brackish Water</b>
<b>Captive Deionization</b>
<b>Mangroves</b>

**Table 2.** Characteristics of Water

<b>Agriculture</b>
<b>Drinking</b>
<b>Bathing</b>
<b>Oil &amp; Gas</b>
<b>Food</b>
<b>Pharmaceutical</b>

The more cited work is geared towards agriculture. This study proposes to increase water in drought areas; although, it may increase water for agriculture which is not the focus for the author. The studies place a focus on chemicals. The processes eliminate toxins and balance minerals and do not need an abundance of chemicals. The Middle East is renowned for desalination, and they have the largest amount of desalination plants and show a surplus, paradox, areas are scarce of quality water resources. This study differentiates as it does not have an evolved interest in chemicals. In this article by author Djamel Ghernaout, the author presents an overview of the state-of-the-art area of mathematical modeling for reverse osmosis (RO) processes (Ghernaout, 2017.p.112).

The similarity with the articles on water processes is roadmaps and methods. An important variable mentioned frequently in the articles is pressure. From the idea, which conducted to RO, where Samuel T. Yuster imagined the concept of utilizing Gibb's adsorption equation as a road map to discover methods for making fresh water from Brackish water and seawater, started a long history for a new revolutionary technology for desalination and water treatment (Ghernaout, 2017, p.117). Modeling RO technique still has great tasks to perform until a complete and exhaustive model is obtained (Ghernaout, 2017, p.117). Geopolitical and discharge are two variables to consider in the study. Are lakes being built around that are inaccessible?

### Feasibility Study

**Definition-Preliminary Feasibility Study** refers to the verification and evaluation of the validity of a new large-scale project conducted in advance under the supervision of the Ministry of Economy and Finance by Article 38 of the National Finance Act and Article 13 of the Enforcement Decree of Act to establish a valid budget allocation and fund management plan for new projects (Korea Development Institute, 2018, p.1).

**Purpose-**The purpose of the Preliminary Feasibility Study is to prevent wasting of budgets and to uplift the efficiency in fiscal management by contributing to the transparent and fair decision of the new investment to a government project based on prioritization through the objective and neutral investigation of the validity of a large-scale government project (Korea Development Institute, 2018.p.1).

### Assessment of Project Plan

If necessary, The Minister of Economy and Finance can review the appropriate project scale, total project costs, and efficient alternatives of the projects exempted from the Preliminary Feasibility Study based on the methods of Preliminary Feasibility Study and reflect the result in the budget proposal and the establishment of a fund



management plane (Korea Development Institute, 2018.p.1). The report notes that policymakers will need to make trade-offs between short-term, uncoordinated measures to respond to immediate water needs, and long-term measures needed to address structural water issues (The World Bank, 2021. P.1). Recognizing and managing these trade-offs will help ensure that water risks do not undermine progress toward a sustainable recovery in the MENA region (The World Bank, 2021. P.1).

The objective of the Red Sea and Gulf of Aden Ecosystem Management Project for the Middle East and North Africa is to improve management in the marine resources in the Red Sea and the Gulf of Aden in selected MPAs building on resources protection and incentive systems for communities and the harmonization of the knowledge base on marine resources among Regional Organization for the Conservation of the Environment of the Red Sea and the Gulf of Aden, or PERSGA member countries (The World Bank, 2021.p.1).

The feasibility study is intending to show the **no-project results** as well as the projected results if adoption takes place. The oil prices drop which occurred in international markets in 2014 has renewed concerns about the economic situation of Saudi Arabia (Faudot, 2019.p.1).

Vision 2030 is a plan for peace and overcoming dropped oil prices (Faudot, 2019, p.1). Saudi Arabia is the biggest oil exporter in the world, and its oil production costs are among the cheapest in the world (Faudot, 2019. p.4). Saudi GDP depends on oil export revenues (Faudot 2019.p.4). It does not mean that no poverty exists in Saudi Arabia, but the Saudi economy is led by a distributive state, not by capitalist entrepreneurs and expropriation of labor (Faudot.2019. p.10).

The enormous wealth accumulated by the Royal family and by the Saudi elites who have privileged access to the oil rent does not make capitalist entrepreneurs (Niblock and Malik, 2007, pp.88-89, Faudot.2019. p.10). "Dependency on the state has rendered a large segment of the Saudi population unwilling even to consider employment beyond the public sector (Faudot, 2019. p.12).

Saudi Arabia looks like a pre-capitalist economy where happened contrary to what Karl Max described as the process of primitive accumulation (Faudot, 2019. p.10). Geopolitical and contractual are imperative in the adoption process. "Memorandum of Understanding," needs to be investigated.

With solar panels, there is no need for electricity or pipes. SOURCE Hydro panels are an expensive way of making water and a small volume of water produced is another determinant (GWI, 2020). Feasible to consider a "contingency resource" (GWI, 2020).

Desalination continues to win on production as there is an unlimited source of water available from the sea. There is still a quality taste that is further researched. Which taste is preferred etc.?

An example is Perrier water; they have made a tremendous name for themselves in quality. Individuals are willing to pay more to drink Perrier. There is a sense of urgency in coupling renewable energy.

In Jordon's case, they have capital issues. One way to increase revenue is to share cargo loads. It needs further investigation but what is a possibility is delivering the water to Jordon with the highest security and coming back with retail. Aquila's network of caravan trade was crucial in establishing motorized connections across the

territories that had formerly been parts of the Ottoman Emon Empire (Petriate, 2021, 273). Private and public are working together; paradoxically, have not achieved the desired results. Co-sharing reduces the burden of elaborate costs and keeps the price affordable for the desalination plants in the Middle East showing the surplus (they are the only ones to show such success).

In the Middle East and North Africa, the region with the highest levels of forced displacement, water resilience is key to long-term growth (The World Bank, 2021. P.1). The report anticipates that the world's cities, which receive migrate and are now how to 55% of the global population, will face an arising number of "day-zero" events- when taps run dry (The World Bank, 2021. P.1). The report, Ebb and Flow provides the first-ever global assessment of the impact of water on migration ever assembled, covering half a billion people from 189 population census in 64 countries, from 189 censuses (The World Bank, 2021. P.1).

In the Middle East and North Africa (MENA), where 60 percent of the population lives in the water-stressed areas, the report notes that water is already one of the main vulnerabilities faced by people living in the region, particularly those displaced by conflicts and the host communities (The World Bank, 2021. P.1). Yet it is often the poor that cannot afford to leave (The World Bank, 2021. P.1). The MENA region has the world's highest levels of forced displacement with an estimated 7.6 million refugees (about twice the population of Oklahoma), of whom 2.7 million are hosted in the region, and 12.4 million internally displaced fleeing protected conflicts (The World Bank, 2021. P.1).

Using data from Duke University's targeting of infrastructure in the Middle East (TIME) database, the report finds that, since 2011, there have been at; least 180 instances in which water infrastructure was targeted in conflicts in Gaza, Yemen, Syria, and Libya, leaving hundreds of thousands without access to water (The World Bank, 2021. P.1).

### **Resolution Opportunities**

Integrate state-of-the-art innovation, partnerships, private investing, co-sharing shipments, and knowledge for informed decision-making.

- Ecological Partnerships
- Import & Export Arrangements
- Proper Licensing
- Proper Disposition of discharge
- Maintaining records
- Achieving the highest quality water with maintain quality
- Analyzing Key performance
- Cooperative Management for shared water resources
- Expand on keeping the peace



**Barriers**

We are in a time of market uncertainty, oil price volatility and energy transition, as the world moves to a lower-carbon system to tackle climate change (Brekelmans, 2018.p.1).

**Red Sea Case Study**

(Weinert, 2020)

The case study presented is the Red Sea project and an investigation into the Dead Red Sea. The main project is called, “Triple Bay,” (Gulf Construction Online, 2021. P.1). The Red Sea project and Amaacla are expected to create more partnerships and break new ground (Gulf Construction Online, 2021. P.1). We are embracing nature-based solutions in addition to technical approaches for carbon sequestration, including growing more mangroves and sea grasses, and even mechanical trees, which will help us to achieve 100 percent carbon neutrality (Gulf Construction Online, 2021. P.1).

We plan to deploy around 2,500 Internet of Things (IoT) sensors throughout the coral reefs, turtle nesting sites, and the wider lagoon (Gulf Construction Online, 2021. p.1). The goal is to achieve a 30 percent net conservation benefit by 2040 (Gulf Construction Online, 2021. P.1).

**No Project Results**

If the water is not distributed properly then there will be

- Increased platform costs.
- Increased number of vessels needed.
- Poor Drilling performance.
- Unsafe sites.
- Compromised quality and reliability.

### **Problem Statement**

The general problem is the growth of population, industrialization, environmental deterioration, and economic evolution in the world has resulted in increased demand for accessing fresh water (Ali, Hilal, Pathak, Shon, 2020.p.485).

### **Purpose of Dissertation Study**

The author Diane Roessler Weinert, began a study of eczema when testing cures hydration was a factor for curing eczema. Testing on one patient, the eczema was cured. The study trumped the impossible.

When the study was taking place, the author wanted the le crème' de, le crème of everything that needed to be implemented. The phenomena were reached, and the research expanded. The author was elated when Capitol Technology University accepted the proposal for the water project. The Middle East was the chosen geographical location as when the author was investigating areas the author came across "Vision 2030". The author has learned a lot in her academic years and one thing stands out you must have focus and be specialized and if you deviate or go one million directions it will not work. That is why only the Middle East is selected.

Chi-square and meta-analytical are the methods synthesized in the study. I will be implementing chi-square instead of showing multiple scenarios. I will present to the chair the feasibility study with information on costs executing the study and if the proposal is not executed. Empirical evidence has been chosen over conventional theory. If it has not worked in the past, why do we accept the concept that it will work today? Desalination is a process that works; however, it is geographical. To distribute the water another process will need to be included. Conventional truth (samvrit-satya) is tapped in to include the history of desalination. More attention is applied to transparency that will be referred to as the ultimate "real truth".

The goal is to conclude the study with information that will assist in the discovery of relevant and accurate decisions. The satellite data includes relevant data about water availability and scarcity in the immediate area in the Middle East with metrics of limited rainfall, groundwater, rather than approximating measurements (WRAP, 2018.p.1).

### **Significance of this Study**

The purpose of this quantitative phenomenological study is to complete a feasibility study of extensive data of deep-sea water, technology such as hydro panels, and desalination to eliminate quality water scarcity and improve health for displaced people in the Red Sea such areas as Jordon.

### **Nature of Study**

The study will contribute to the field with knowledge about drought areas in the Middle East and present available options to improve the best and low-cost alternatives and how these will influence specific research questions (Capitol Technology, 2021.p.1).

### **Research Questions**

The questions are designed to synthesize chi-square and meta-analytical methods (Randolph, 2009. 4). The key components are (a) a rationale for conducting the review, (b) research questions or hypothesis that guide the

research, (c) an explicit plan for collecting data, including how units will be chosen, (d) an explicit plan for analyzing data, and (e) a plan for presenting data (Randolph, 2009. P.4). The study takes on a specific direction of investigating pricing for the alternatives of water and proposes a recommended solution.

The Middle East through this study has been categorized as “high risk” due to geopolitical.

The questions are geared to understand how the water is currently processed and to see if the recipients may have a recommendation. Geopolitics is in flux (Service, 2020.p.1). Putin has argued that the export of liberal values to the region crushed domestic traditions and destabilized whole societies (Service, 2020. P.1).

Nothing is stranger that the notion, widely held that Russia is a newcomer to the Middle East (Service, 2021. p.1). The Syrian military intervention which started in 2015 was a piece with this geopolitical strategy (Servioce, 2020. p.1). Russia has established a solid foothold across the Middle East (Service, 2020. p.1).

The Mediterranean is both a fault line of cultures in conflict and a geostrategic chokepoint (Strauss, 2019. p.1). Even in ancient times, a series of small canals connected the Nile River-and, thereby the Mediterranean-to the Red Sea, but they were in no way as efficient or as navigable as the Suez Canal (Strauss, 2019.p.1).

**Table 3. Research Stage**

Research Stage					
Stage Characteristics	Problem formation	Data Collection	Data Evaluation	Analysis and interpretation	Public Presentation
<b>Research questions asked</b>	What evidence is included in the review?	What procedures be used to find relevant evidence?	What retrieved evidence be included in the review?	What procedures be used to make inferences about literature as a whole?	What information be included in the review report?
<b>The primary function in Review</b>	Constructing definitions that distinguish relevant from irrelevant studies.	Determining in the research contained potentially relevant sources to examine.	Applying criteria to separate “valid” from “invalid” studies.	Synthesizing valid retrieved studies.	Applying editorial criteria to separate important from unimportant information.
<b>Procedural differences that</b>	Differences included	Differences in the research	Differences in quality criteria.	Differences in the rules of	Differences in guidelines for

<b>create variation in review conclusion</b>	operational definitions. Differences in operational detail.	contained in sources of information.	Differences in the influence of non-quality criteria.	inference.	editorial judgment.
<b>Sources of potential invalidity in review conclusions.</b>	Narrow concepts might make review conclusions less definitive and robust. Superficial operational detail might obscure interacting variables.	Accessed studies might be qualitatively different from the target population of studies. People sampled in accessible studies might be different from a target population of people.	Non-equality factors might cause improper weighting of study formation. Omissions in study reports might make conclusions unreliable.	Rules for distinguishing patterns from noise might be inappropriate. Review-based evidence might be used to infer casualty.	Omissions of review procedures might make conclusions irreproducible. Omission of review findings and study procedures might make conclusions obsolete.

(Randolph, 2009, p.5).

### ***(1) Will having quality water available increase the revenue in improvised areas?***

The problem of low coverage levels, particularly among poor and marginal communities is of particular concern in developing countries and those with rapid rates of population growth and migration (Mumssen, Triche, Sadik, Dirioz, 2017. p.12).

### ***(2) Who is purchasing the water?***

Water is, of course, highly political and management decisions are subject to serious debates and anxieties at scales, but often with a sense of higher stakes in desert settings (Koch, 2021. P.90). The cases analyzed have engaged the formal private sector (national, international, or both) to invest in and operate large-scale projects (Mumssen, Triche, Sadik, Dirioz, 2017. p.12). Economic regulation refers to the laws, regulations, enforcement mechanisms, incentives, and processes that are employed by governments to ensure that essential services such as water supply and sanitation services (WSS) are available to the population at reasonable prices (Mumssen, Triche, Sadik, Dirioz, 2017. p.12). Industrialized nations agree under the convention to support climate change activities in developing countries by providing financial support for action on climate change-above and beyond any financial

assistance they already provide to these countries (United Nations Climate Change, 2021. P.1). A system of grants and loans has been set up through the Convention and is managed by the Global Environment Facility (United Nations Climate Change, 2021.p.1). Industrialized countries also agree to share technology with less advanced nations (United Nations Climate Change, 2021.p.1). With the Paris Agreement, countries established an enhanced transparency framework (ETFD) (United Nations, 2016. P.1). Under the ETF, starting 2024, countries will report transparently on actions taken and progress in climate change mitigation, adaptation measures, and support provided or received (United Nations, 2016.p.1).

***(3) What are the dangers to marine life?***

Regulatory framework-usually refers broadly to both the enabling environment that supports accountability, transparency, and achievement of regulatory objectives as well as the specific regulatory rules, mechanisms, and procedures that are applied as part of the regulatory process (Mumssen, Triche, Sadik, Dirioz, 2017. p.12).

***(4) What are the dangers with the infrastructure?***

Formal regulation of WSS became a topic of international interest in the late 1980s when the rising costs of infrastructure needed to serve expanding populations and protect the environment led policy makers to seek private investment (Mumssen, Triche, Sadik, Dirioz, 2017. p.12).

***(5) Can increasing wealth increase the availability of water resources?***

Water resources management (WRM) aims to ensure the sustainability and quality of water resources, manage water shortages, and avoid the economic, political, and national security risks associated with water shortages (Mumssen, Triche, Sadik, Dirioz, 2017. p.12).

***(6) How do you receive water information?***

***What are some of the challenges you have encountered in leading a project of this scale since its interception (Gulf Construction Online, 2021. P.1)?***

From our approach to regenerative tourism to the fact, we are building our infrastructure that ensures we are off-grid 100 percent powered by renewable energy (Gulf Construction Online, 2021. P.1). A lot of what we are doing is new (Gulf Construction Online, 2021. P.1).

Likewise, our strict sustainability commitments mean for any development works we carry out, we must ensure that the habitat and wildlife are protected at all costs (Gulf Construction Online, 2021. P.1).

***What is the vision of creating cooperation between The Red Sea Project and the Amaala project?***

The Kingdom's Vision 2030 program lays out the framework to diversify the economy with three main themes: a vibrant society, a thriving economy, and an ambitious nation (Gulf Construction Online, 2021. P.1). The Red Sea Project includes inland resorts but is a destination built around a stunning archipelago of more than 90 islands (Gulf Construction Online, 2021. P.1). Please comment on the progress achieved to date on The Red Sea Project, given the fact that it is a unique development in a remote location and like all projects, will have faced challenges in the wake of the COVID-19 crisis (Gulf Construction Online, 2021. P.1).

Despite the difficult circumstances surrounding the pandemic, we have more than 500 contracts worth over SR15 billion (\$4 Billion) to local and international partners (Gulf Construction Online, 2021. P.1). We have an exciting year ahead of us at TRSDC (The Red Sea Development Company) (Gulf Construction Online, 2021. P.1). As we move into a post-COVID world, we are creating more partnerships, breaking new ground, and continuing to move forward with our plans to welcome the first guests by 2022 (Gulf Construction Online, 2021. P.1).

Source water is produced using patented solar technology that draws pure water vapor out of the air and converts it to premium, mineralized drinking water (The Red Sea Development Company, 2021.p.1). Water created from these hydro panels will be bottled at a plant that also runs on solar energy, creating the largest solar-powered of its kind (The Red Sea Development Company, 2021.p.1). Located on-site at the Red Sea Project, the source facility will have a capacity of 2 million 330 ml bottles annually and will initially produce 300,000 bottles a year (The Red Sea Development Company, 2021.p.1).

The reusable glass bottles will be refilled on-site as part of a circular sustainable distribution model (The Red Sea Development Company, 2021.p.1). Water harvesting and bottling will generate zero carbon and zero single-use plastic bottles (The Red Sea Development Company, 2021.p.1). Our partnership with Global Source makes us the only destination in the world with truly regenerative bottled water and reflects our commitment to separate using only renewable energy and free of single-use plastics (The Red Sea Development Company, 2021.p.1). TRSD uniquely serves the sustainable tourism market, which is poised to grow by the US \$130.12 billion (about \$400 per person in the US) between 2020-2024 (The Red Sea Development Company, 2021.p.1). The Red Sea Development Company will make Source water its exclusive water including the largest solar-powered facility of its kind ensure the use of glass over plastic has 0 impacts and produce 300,000 glass bottles per year (The Red Sea Development Company, 2021.p.1). Source Global, PBC's mission is to make drinking water an unlimited resource (The Red Sea Development Company, 2021.p.1).

### **Theoretical Framework**

The theoretical framework selected is circular technology economy framework that will include- quantitative synthesis, budget, historically, conceptually, methodology, geopolitical, quality, coverage, significance, and rhetoric (Randolph, 2009. p.1).

Familiarity with the historical, germinal, and current literature in the field. The framework was selected for this study because it is focused on the scope, the author manipulated the questions to fit the industry. Thanks to its single nature, this framework will enhance the knowledge of the water industry, the history of the water industry, and the upcoming project for the water industry. Literature analysis and discussions took place held at the 2021 Family Conference.

The study considers the different methodology, conservatism, bureaucracy, and geopolitical and investigates the logic that each plays in each role of the process in developing sustainable water that is accessible. Additional verification was completed by experts from the water and engineering fields. There will be a thorough investigation of the issue of the Middle East's lack of water. The frequency and hypothesis of water distribution in the Middle East are tested using meta-analysis and chi-square. The probability theory shows that desalination is a more



popular choice among people in the Middle East. The Middle East also shows that they have a surplus. The author wants to eliminate falsification and be able to present the truth.

Investors are interested in knowing if they will make money. In the article by Richard C Whitfield, “Solar Thermal Hot Water for Hotels,” the process of hotel water distribution is explained. The author explains that the solar approach does work yet, not adopted by everyone.

Historically, all hotels incorporated boilers fueled by word or fossil fuels for making hot water (Whitefield, 2021. P.1). Solar water heating systems (“Solar water heating”, n.d.) are also starting to attract interest for hotels (Whitefield, 2021. p.1).

As to be hoped about climate change issues, hotels are starting to put considerable efforts into reducing energy consumption, and these initiatives are achieving very reasonable returns on investment and decreasing (and not increasing) the operating costs (Whitefield, 2021.p.1).

### **Research Design**

For the Foster Plot, author searched the ISSN number on Google Scholar and recorded the number of citations.

### **Identified Research Variables**

Independent Variable - **State-of-the-Art water innovation study.**

Alternative equipment will be researched, and a feasibility study is given. The goal is to produce the best quality water and the lowest cost available.

### **Dependent Variables**

**(1) Population Growth** - The population is expected to increase with mitigation by 2050.

**(2) Risk** - Area studies research and forms of knowledge can often be “territorially trapped” - that is, they are bound by rigid spatial frames of the global map, which neglect the dynamic ways that people, ideas commodities, and power relations cross borders and unite places for removal from one another (Koch, 2021. p.89).

**(3) Historical** - The history of the antiquated rhetoric will be analyzed. Desalination is the preferred method.

**(4) Geopolitical** - A desert geopolitics framework is thus insofar as it refuses to take the “place out of the landscape” by detaching water as a separate category of analysis (Koch, 2021. p.90). Is strong-arming keeping one country ahead of another? Is lack of water due to affordability?

This will be investigated. The field of geopolitics encompasses a great deal but for critical geographers today, it most fundamentally reflects how people visualize and make sense of the world by associating a political and moral value with various places (geopolitical imaginaries) and how they act on those maps (geopolitical practices) (Koch, 2021.p.101). To study geopolitics is to examine “the geographical assumptions designations and understandings that enter into the making of world politics” (Koch, 2021. p.101).

**(5) Landowners** - This article shows how joint imaginaries of the desert have been enlisted in both forged foreign relations and domestic state making in the US West and the Arabian Peninsula (Koch, 2021. p.101). The

best-known case today of desert agriculture imperialism is the Israeli settlements in Palestine, ranging from the earliest Zionist farming projects to more recent tree-planting campaigns and the state-led takeover of scientific water resources needed to sustain Palestinian and Bedouin farmers (Koch, 2021. p.89).

### **Definitions**

**Bell curve** - is the normal distribution. The hump represents normal.

**Chi-Square** - Shows the relationship between categorical variables.

**Cosmopolitan** - The nebulous core shared by all cosmopolitan views is the idea that all human beings, regardless of the political affiliation, are (or can and should be) citizens in a single community (Kleingeld, Brown 2019, p.1).

**Delphi Method** - has been applied in various fields including healthcare, marketing, education, information systems, transportation, engineering, and finance (Zellner, Abbas, Budescu, Galstyan, 2021.p.10). As with any other qualitative method relying on forecasts, the quality and accuracy of the generated forecast depend on the study design, as well as how it addresses human biases such as anchoring, framing, and desirability (Zellner, Abbas, Budescu, Galstyan, 2020.p.10).

**Computational Theory** - The effective deployment of simulation models depends on access to diverse datasets, the use of analytics capabilities the ability to visualize model outcomes, and to capture share and re-use simulations as evidence in research and policymakers (Birkin, Procter, Allan, Bechofer, Buchan, Goble, Smith, Lambert, Roure, Sinnott, 2010, p.1).

**Cosmopolitan Culture** - They serve as centers of economic development and value diversity, creativity, and equality (Sevincer., Kwon., Varnum, Kitayama, 2021.p.295).

**Desalination Plant** - Desalination plants are taking out the seawater inland using marine intakes, utilizing large amounts of energy to remove salt while producing concentrated as a byproduct (Science Direct, 2021. P.1).

**De-securitization**- The process opposite of securitization which involves the return of an issue from an urgent, securitized situation to the area of normal negotiations in political sphere (ICI Global, 2021. p.1).

**Double Mass Curve**- A condition to be observed.

**Empirical Models**- Includes scientific methodology with measurements.

**Enterprise Technology Framework** - is a key in an enterprise-wide business and IT architecture, as part of enterprise architecture (Genovese, 2021.p.1).

It also helps to define the specifics for a line of business that may be required as well or in the case of a hybrid cloud mode- what system or application must stay in the datacenter at the corporation (i.e. “system of record”) vs what may be hosted in a SaaS public model or accessed via a “system of agreement” via a mobile device (Genovese. 2014.p.1).

**Environmental Category** - When we provide governments with financing to invest in projects- such as building a road, connecting people to electricity, or treating wastewater-we aim to ensure that the people and the environment are protected from potential adverse impacts (The World Bank. 2021.p.1).

**Exajoule** - is a unit of energy, (Statista, 2021, p.1).

**Flux coupling analysis (FCA)** aims to describe the functional dependencies among reactions in a metabolic network (Boyd, 2021. p.1). Currently, studies of coupling relations are qualitative in the sense that they identify pairs of reactions for which the activity of one reaction necessitates the activity of the other one, but without giving any numerical bounds relating to the possible activity rates (Boyd, 2021. p.1). The potential applications of FCA are heavily investigated, however apart from some trivial cases there is no clue of what bottleneck in the metabolic network causes each dependency (Boyd, 2021. p.1).

**Geopolitical** - Failing to follow through on agreements of intent is costing some shared countries billions.

**Holistic Approach** - Looking at one's well-being.

**Life-cycle assessment** - Analyze the environmental impact from technologies, processes, and distribution.

**Mangrove** - Artificial systems that can mimic chemistry.

**Meta-analytical**- The results are combined with multiple studies.

**Percentages under the normal curve** - Calculated between the upper and lower numbers.

**Regulatory Framework**- Usually refers broadly to both the enabling environment that supports accountability, transparency, and the achievement of regulatory objectives as well as the specific regulatory rules, mechanisms, and procedures that are applied as part of the regulatory process. (Mumssen, Triche, Sadik, Dirioz, 2017).

**Rentier regime** - is a particular regime with its mode of regulation (Boyer, 2015. p.254-257, Faudot. 2019, pg.3). The word renter usually refers to the social position of the individual who owns lands and earns revenues of its properties without working- which means without creating value (Beblawi, 1987, p.50, Faudot.2019. p.3).

**Snowball** - Action leads others to follow.

**Specs** - Measure of Performance. The specifications.

**Standard Deviation** - The measurement between numbers.

**Topography** - Integrating artificial and natural.

**Variance** - The distance between the measurements is spread out from the average value.

**White Space** - A white paper is an authoritative report or guide that often addresses issues and how to solve them (Stanford, 2021.p.1). The term originated when government papers were coded by color to indicate distribution, with white designated for public access (Stanford, 2021. P.1).

### **Assumptions**

The findings are making desalination the primary choice for water distribution. SOURCE is an attraction in “VISION 2030”. The coverage of research strategies of inquiry is limited to frequently used forms: surveys and experiments in quantitative research; phenomenology, ethnography, grounded theory, case studies, and narrative research in qualitative research, and concurrent, sequential, and transformation designs in mixed methods research

(Creswell, 2009, p.14). The philosophical assumptions in examining research and using theories are introduced as preliminary steps that researchers need to consider before they design their studies (Creswell, 2009, p.14).

### **Scope, Limitations, and Delimitations**

The solar thermal system continues to perform to expectations, it has significant implications for future similar hotel developments (Whitefield, 2021. P.7). Moreover, the modular nature of solar thermal systems means that they can potentially be distributed through the property to increase resilience and reliability while simplifying piping networks and maintenance (Whitefield, 2021. p.7). The commercial laundries that provide cleaning services to hotels are other prime candidates for solar hot water systems (Whitefield, 2021. p.7).

It is a perception that SOURCE water can reduce costs. There is not a verifiable SOURCE that debates the quality of the water. From no plastic to no transportation, it does appear that the costs can be minimized.

### **Research Methods**

This is a quantitative, analytical model, in-depth- analysis, grounded theory meta-analysis study including primary and secondary research. A holistic environmental approach is taken with indicators which include vibrant society, thriving economy, ambitious nation, higher-education, innovation, sovereign wealth with a frequency of occurrence. The indicators chosen to detect the market for productivity are high conversion rates, large consistent deposits, and engagement with education. The study will include past methods implemented and then compare with the results of methodological flaws of those methods presented. Peer-Reviewed articles from to A journals are selected. Search engines ProQuest, Google Scholar, Royal Society & Stanford are used. Academic sends me an article daily. The author enjoys Smart technology, and a percentage is cited; however not all the articles are used in the study only implement the novel. On September 19, 2018, the Water Environment Federation published an article on their Stormwater report blog focused on WRAP's collaboration with NASA DEVELOP to use satellite data to assist with identifying the most suitable locations for rain harvesting systems (WRAP, 2018. P.1). The author searched the Persian Gulf, Talha, Khan, Aquil, Qatar, Saudi Arabia, Israel, Bahrain, United Arab Emirates, and the counts were 415 companies and 1,860 contacts (Dunn, 2021p.1).

The study implements the methods of chi-square to connect the relationships between categorical variables. Mangrove to include Artificial Intelligence. Rentier Regime to implement regulation and investigate to conclude who owns the land. Ad hoc will drive the paper as it is designed to address the problem of water shortages. White Space is designed for the public.

Construction theory implements the philosophy of law.

The problem of water shortages. White Space

All counts related to the water desalination industry,

- Vessel
- Solar Power Plant
- Wind Power Plant

- A Battery Storage System
- Sewage Treatment Plants
- Collecting Water from Air - Extracted by Condensation
- Pumping - Pipeline
- Marine-Ships
- Desalination - Reverse Osmosis
- Bottling - Plant Construction
- Supply - Chain
- Logistics-Packaging Distribution
- Mineralizing Rivers
- Drilling into the Ground
- Underground Reservoirs
- Extracting Water from the Air
- Onshore
- Offshore
- Municipal and Solid Waste Plant
- Primary Networks/Hubs
- Infrastructure & Facilities
- Brackish Water
- Captive Deionization
- Mangroves (Dunn, 2021)

A database has been designed and coded for the articles selected. The results are examined at conferences and regularly by experts within the water industry. The process of discovering phenomena is documented.

The process begins with an electric search of qualified articles that have high citation numbers (Randolph, 2009. p.1). Databases are searched by keywords (Randolph, 2009. p.1). The research is complete when a point of saturation has been reached (Randolph, 2009. p.1). The relevant information was separated from the irrelevant information (Randolph, 2009. p.1).

The authors' citations from articles have been verified; consequently, not implemented in future research as the author finds outdated. The author uses a five-category Rubicon for evaluating the literature review, coverage, synthesis, methodology, significance, and rhetoric (Randolph, 2009. p.11). What might we glean from investigating the myriad ways that deserts of the world relate to one another (Koch, 2021. P.190). Like oceans,

deserts represent an environmental imaginary that is hoped by certain physical traits (Koch, 2021. P.190). But humans always filter these traits through social, cultural, and political lenses- sometimes the unique features are deemed important (e.g., emphasizing the differences between deserts in Arizona and Arabia), and other times they are ignored (e.g., emphasizing a more global desert experience) (Koch, 2021. P.90).

Just as one never thinks to detach “water” from the story of oceans in the maritime response to the territorial trap and arid-lands response does not treat “water” as a separate category of analysis (Koch, 2021. P.90).

- **Hypothesis** - By having extensive amounts of desalination plants water will be available for everyone. Pricing will influence the decision process. The Middle East is focusing on keeping the peace.

When individuals have available resources such as quality water they are living in a peaceful atmosphere. This leads to Maslow’s theory that basic needs must be met. When basic needs are met then people can prosper when the basic needs are not met then depression will set in.

Vision 2030 is promoting keeping the peace. There are over 500 contracts signed by supporters.

- **Gaps** - Clear transparency on water processing alternatives. It has been difficult to complete a feasibility study as the author was unable to substantiate the pricing alternatives. RO remains a limited physical process that needs more research in terms of design and construction to increase its performance (Gheraout. 2017, p.118).

### *Summary*

What is a statement of Washington’s “red lines,” - there is an urgent need for an end to ambiguity about what the US leadership is willing to tolerate before the military, diplomatic or economic sanctions are applied (Service, 2020? P.1). Transparency enhanced public approval of decisions (Randolph, 2009. P.1). America has a lot of influence from the Elite (Service, 2009. P.1). America lacks the capacity for symmetrical retaliation simply because in Russia, unlike the United States, the result of a presidential election is known in advance and immune to external influence (Service, 2009. P.1). The instruments of IT power are always available (Service, 2009. P.1). Jordan signed an agreement in 2013 to join the water shared program which has now changed.

Syria has decided not to go through with sharing water. The countries are fighting for independence and do not want to work with others. Israel paid an absorbent amount for Jordan to renege.

The world's biggest owner of publicly traded stocks, the Norway sovereign wealth fund, is about to get the political go-ahead to insist that all companies in its portfolio have clear targets for cutting carbon dioxide emissions (Bloomberg, 2021. p.1). It's a goal that was enshrined in the 2015 Paris agreement as an essential step toward preventing catastrophic temperature rises (Bloomberg, 2021. P.1). “It's not practical to embark on something that's not coordinated with others,” (Bloomberg, 2021. P.1). The biggest gains are tied to coordinated action when investors team up (Bloomberg, 2021. P.1). It finds that effective cooperation between Israel and Palestine is unlikely soon if both parties with the business-as-usual approach (Dai, 2021, p.1). What constraints the two parties from achieving consensual agreement are political tensions, the constraints of current technology, the different perceptions of the value of the shared water, the mistrust between the two parties, the lack of external enforcement mechanisms, and the impacts of the domestic political environment (Dai, 2021. p.1).



Israel uses the water governance approach (Dai, 2021p.1). Israel and Palestine in the water sector has been analyzed in a rich body of literature and interpreted through different disciplines, for example, legal, international relations and politics, engineering, and economics, and different perspectives such as climate change, water management, socio-environmental relationship, cultural, and human rights (Dai, 2021. p.1). The 10 building blocks framework, the OECD Water Governance Indicator Framework, the Governance Capacity Framework, the Operational Framework for Water Governance, and frameworks that focus on the conditions of good governance, and the individual Governance criteria (such as effectivity, efficiency, and legitimacy (Dai, 2021. p.1). These frameworks demonstrate one of the more important general conditions, such as the importance of indicators, the interconnectivity capacity of governance, and the conditions for Governance from a broad perspective (Dai, 2021. p.1). Dai's study proposes to examine the implementation constraints on Israel-Palestine water cooperation (Dai, 2021. p.1). To do so, the author chose the 10 Building Blocks framework as the analytical framework (Dai, 2021. p.1). This is because, compared to other frameworks, the 1p building blocks Framework distinguishes water governance conditions related to content (characterization of water in terms of issues, drivers, and values), organizations (the role of stakeholders, trade-offs, and regulations), implementation financing, enforcement, and conflict resolution) (Dai, 2021. p.2). The 10 Building Blocks Framework was developed by van Rijswijk etc. al. to identify the strengths and weaknesses in water governance capacity from a holistic perspective (Dai, 2021. p.2). Each of the 10 elements is assessed by answering corresponding questions (Dai, 2021. p.1).

In Section 2 the author will be introducing the study with a literature review map in the appendix (Academic Review Checklist, 2021.p.1). Historical overview explaining research journals those were included in the study along with research documents and current findings (Academic Review Checklist, 2021. P.1). Reverse Osmosis can remove toxins and deliver purified water, the alternatives are not as transparent. In section 1 there is evidence to support desalination has the advantage.

Section 2 will delve more into the investigation of the gaps as we know now, water set aside for agriculture, white space, and transparency. The UNFCCC borrowed an especially important line from one of the most successful multilateral environment treaties in history (the Montreal Protocol in 1987) it bound member states to act in the interests of human safety even in the face of scientific uncertainty (United Nations Climate Change, 2021. P.1). Further studies will have to investigate how to influence the norms, traditions, and beliefs towards favorably supporting household sanitation decisions (Revilla, Seetharam, Rao, 2021.p.2).

## **2. Literature Review**

### ***Introduction***

The author undertook a meta-analysis approach to evaluate the relative impact of the water equipment process. Randomized case studies were compared by the damages of the water distribution process versus the benefits. In total the Middle East identified reported long-term benefits showing a surplus in water distribution with desalination. The primary endpoint was a stream of quality water available to everyone without an astronomical price. A funnel plot was used for quantitative purposes. The meta-analysis investigated the relative longevity of quality water implementing a and b are true and c is false.

UAE residents use up to 550 Liters of water per day (The international average is 170-300 per day making it 82 percent higher than the world average (Gulf News, 2018.p.1). The UAE has the highest bottled water consumption per capita (265 Liters per year). The UAE accounts for 14 percent of the world's desalinated water (Gulf News, 2018. p.1).

Intensive research is required as all tests were not evaluated which concludes biases. The purpose of this funnel plot is to detect any risks and improve the quality and profitability of quality water. An exorbitant number of biases exist.

In this section, the author shares findings and a couple of lessons learned on the history of water distribution in the Middle East. The section will allow investors to know in a single sentence what the study is about. Until a more reliable source can be discovered, the World Bank is the one referenced for measures and scales.

The study stands out as it incorporates the top journals and introduces a tangible paper to sum the industry up. The author works with A & E companies to get the costs for the feasibility study. Investors like to see a pattern of success before investing.

"Vision 2030" and Global Networking will be used as a case study. Global Networking helped build the pathway for Artificial Intelligence with Japan and the cure for eczema. Increased revenue by \$8. Trillion dollars.

Global Networking created the design for higher education internationally internally. If commonality and interest can be reached it can improve the wealth of the displaced areas desperate for quality water. This will generate a more pleasant lifestyle for what they are used to and allow for peace amongst rivals.

Once areas are developed with infrastructure and wealth increases it takes a utilitarian approach and will improve physical and mental health. The study will examine if water is available and if it is more of a geopolitical risk that is hindering water distribution. The investigation was completed using an A journal and an expert, Jack Woo.

Jack is a successful attorney family-oriented person putting his kids through college and one if they earn over \$1MM a year with his first job earning \$100,000 a year. When Jack speaks of his investing habits, he explains that he invests with no emotional attachment. He invests in where people are controlling the distribution such as bottled water versus municipal water.

One of the largest issues people are experiencing is imposing themselves on people not interested. This causes the wealthy to flee. There is also the issue of greed set in.

As Jack mentions, taxing the wealthy is what the US has in its strategy; consequently, this will not work as the wealthy are not dumb and no way will they just give you the money. Jordan is showing depletion of the Middle Class. An investigation into Union status is looked at. De-risking is going to be a priority. Some believe that the size of the Middle Class was decreased, especially after the Jordanian family the deterioration of economic conditions resulting from low economic growth rates and high unemployment rates (Aljaloudi, 2021.p.1). The goal of this section is to complete a feasibility study with a cost analysis explaining the opportunities, benefits, and risks. The author will cover different theories and methodologies being implemented throughout history and today. The study will investigate the barriers such as geopolitical, historical, governance, bureaucracy, water inequality, to create

quality water distribution. White spacing and gaps are explored. Conflict resolution and transformation are analyzed by investigating geopolitical.

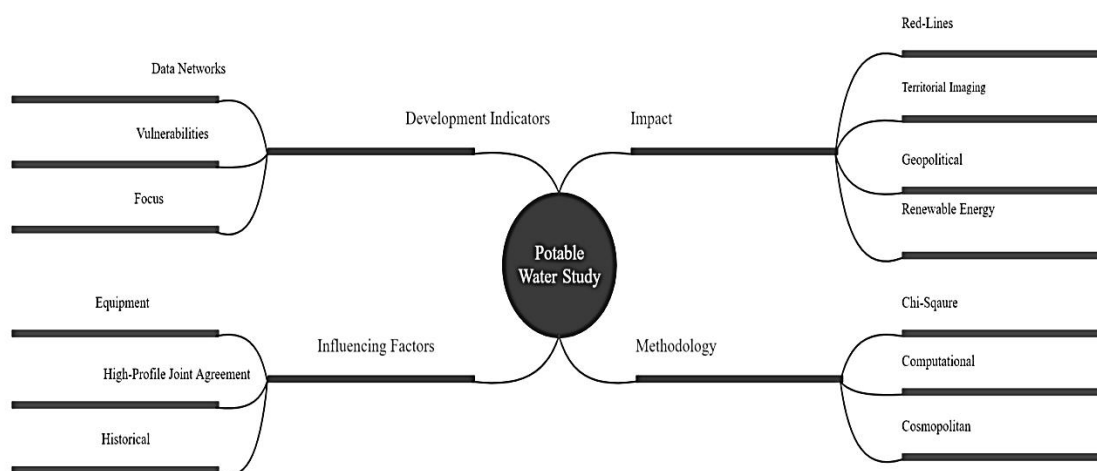
The hypothesis is being implemented to test all findings. The study will present the disruptions that have caused water shortages. The study will explore that by increasing the wealth water scarcity will no longer be an issue for deprived areas.

De-securitization will be employed to get to the root of the issues. The study will consist of a case study of, “Vision 2030”, and investigate the common vision with the cross-border environment and peace building. Who is influencing the decisions will be included.

This is especially pertinent as we are moving into an area of artificial intelligence as the bots are producing the data. The deprived areas must be included in the mapping and budget allocation to meet the basic needs. The study makes clear practical concerns why privacy is important to the Middle East then shows how the concerns can be addressed (Randolph, 2009. p.8).

Current literature will be analyzed implementing a five-category rubric, categories of coverage, synthesis, methodology, significance, and rhetoric (Randolph, 2009. P.11). The author used a rubric to rate articles of 50 education-related academic dissertations (Randolph, 2009. p.11).

**Table 4.** Conceptual Model



### Title Searches, Articles, Research Documents, and Journals Researched

The article, “Understanding Stakeholder Synergies through System Dynamics, Integrating Multi-Sectoral Stakeholder Narratives into Quantitative Environmental Models,” found on Research Gate, illustrates stakeholders and explains how one variable could affect another variable (Tiller et al, 2021.p.7). The Ad Hoc approach of the Study builds the relationships of data, networks, co-sharing, partnerships, experts, and wealth to ensure quality water is available to everyone. Plentiful of cited articles lackluster and less impactful with attention towards agriculture and chemical processing.

The article is a Blueprint for methodology and framework. The goal of the article is to design a comprehensive scope with value and synergy with delivering a new approach with artificial intelligence. The article assists in

answering the question, “Are there any important links missing and if the strength of relations was correctly represented (Tiller et al, 2021. p.7)?”

The study is organized in a historical format chronologically, and emphasis is on the progression of the research methods, theories, and a change in practice over time (Randolph, 2009. p.4). The study is organized methodologically as an empirical paper (introduction, method, results, and discussion) (Randolph, 2009. p.4). The author begins with an introduction, defines the method, and historically presents the results then moves on to discussion formats (Randolph, 2009. p.4). China is inching strongly towards the top of the global order by a vision adopted by the Communist Party to turn China into a middle-level advanced country by 2035 and a superpower matching the United States by 2050 (Saqr Alsulami, 2021. p.1). The United States maintains a strategic military presence in the Middle East to protect its interests (Saqr Alsulami, 2021. p.1). It partnered with the Gulf states to extract and export oil in the past and currently, it is among the biggest trading and investment partners to countries in the region (Saqr Alsulami, 2021. p.1).

The region depends on it to provide high-tech services and products such as industrial, medical, technological, and consumer equipment as well as machinery, transportation, and spare parts (Saqr Alsulami, 2021. p.1). Meanwhile, US investments in the Middle East reached \$75 billion (about \$230 per person in the US) during the period from 2009 to 2019 (Saqr Alsulami, 2021. p.1). This is classed by some as a form of a “soft military presence” to protect its trade movements within key strategic corridors (Saqr Alsulami, 2021. p.1).

Chinese investments in the Middle East and North Africa reached \$197 billion (about \$610 per person in the US) during the period from 2005 to 2020 (Saqr Alsulami, 2021. p.1). Along with this growing technological influence, China’s influence is growing via its Belt and Road Initiative, which strengthens its presence on the ground in the region (Saqr Alsulami, 2021. p.1). Owing to its geostrategic location and its rich energy resources, the Middle East receives much attention from all global powers, despite the divergent visions and political ideologies (Saqr Alsulami, 2021. p.1). The funds for water distribution are through indicators is from UAE Sovereign wealth funds, capital from Gulf equity partners, family offices, The World Bank, Bank of Bahrain, institutional investors, pensions, charities, insurance companies, and endowment funds. Putin has become a player in the Middle East (Durmaz, Habibullina, 2020. P.5365). Our goal is to present the growing role of the Russian Federation in the Middle East using data and explore the role of economic and energy investments in this process (Durmaz, Habibullina, 2020. p.5365). Results were mixed on the efficiency of sanitation delivery since political factors and administrative characteristics vary across locations (Revilla, Seetharam, Rao, 2021. p.2).

### **Conceptual or Theoretical Framework**

In this section, the author explores problem formation, data collection, data evaluation, analysis, interpretation, and public presentation (Randolph, 2009. p.4). With a few modifications, what one knows about conducting primary research applies to conducting secondary research (literature review) (Randolph, 2009. p.4). The key components are (a) a rationale for conducting the review, (b) research questions or hypothesis that guide the research, an explicit plan for collecting data, including how units will be chosen, (d) an explicit plan for analyzing data, and (e) a plan for presenting data (Randolph, 2009. P.4).

Validity and reliability, are the same issues that apply to primary research, also to secondary research (Randolph, 2009. P.4).

**Table 5.** Research Stage

Stage Characteristics	Problem Formulation	Data Collection	Data Evaluation	Analysis and Interpretation	Public Presentation
<b>Research questions asked</b>	What evidence should be included in the review?	What procedures should be used to find relevant evidence?	What retrieved evidence should be included in the review?	What procedures should be used to make inferences about literature as a whole?	What information should be included in the review report?
<b>The primary function in review</b>	Constructing definitions that distinguish relevant from irrelevant studies.	Determining which sources of potentially relevant sources to examine.	Applying criteria to separate “valid” from “invalid” studies.	Synthesizing valid retrieved studies.	Applying editorial criteria to separate important from unimportant information.
<b>Procedural differences that create variation in review conclusion</b>	Narrow concepts might make review conclusions less definitive and robust. Differences in operational detail.	Differences in the research contained in sources of information.	Differences in quality criteria. Differences in the influence of non-quality criteria.	Differences in the rules of inference.	Differences in guidelines for editorial judgment.
<b>Sources of potential invalidity in review conclusions</b>	Narrow concepts might make review conclusions less definitive and robust.	Accessed studies might be qualitatively different from the target	Nonequality factors might cause improper weighting of study	Rules for distinguishing patterns from noise might be inappropriate. Review-based	Omission of review procedures might make conclusions irreproducibl

	Superficial operational detail might obscure interacting variables.	population of studies, People sampled inaccessible studies might be different from the target population of people.	information. Omissions in study reports might make conclusions unreliable.	evidence might be used to infer causality.	e. Omission of review findings of study procedures might make conclusions obsolete.
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(Randolph, 2009.p.5).

### Research Comparison

Conceptual maps were designed from each sectoral causal loop diagram, capturing the system feedback structures across the sectors (Tiller et al, 2021. p.2). Today, a meta-analytical review has taken the forefront (Randolph, 2009. p.8,9). In a meta-analytical review, the reviewer (a) collects a representative or a comprehensive sample of articles, (b) codes those articles according to aspects (study quality, type of intervention used, type of measure used, study outcomes), finds a common metric (standardized mean difference effect size) that allows the study outcomes to be synthesized, and then (c) examines how the characteristics of a study covary with study outcomes (Randolph, 2009. pp.8,9).

One of the largest issues is who is purchasing and the influence they have over the outcome. Private is examined to see how private wealth is distributed. The Middle East is under autocratic rule. With oil prices dropping they are seeking alternative investments.

The participation of the private sector, through public-private partnerships (PPPs), has been considered an alternative effective method for increasing the efficiency and productivity of urban infrastructure development (Tamosaitiene, Sarvari, Chan, Cristofaro, 2020. p.1).

Per capita resource levels are political settlement tends to be more constrained - rulers are threatened by the private sector-autocrats tend to restrict private sector development to prompt or suppress threats from outsiders (Tamosaitiene, Sarvari, Chan, Cristofaro, 2020. p.1). Results show that technical and organizational barriers and risks were perceived as the most important to private sector participation, followed by economic, financial barriers, risks, and then political and legal barriers (Tamosaitiene, Sarvari, Chan, Cristofaro, 2020. p.1).

The top 12 development journals published a total of 18, 329 papers during the period 2000-2020 (Revilla, Seetharam, Rao, 2021. p.2). The data evaluation findings proved that The World Bank has a reliable, significant, and accurate database (Randolph, 2009. p.8). The data was extracted for population growth and funding.

Then the information entered the main body of the dissertation (Randolph, 2009. p.7). The literature review, of course, will require the extraction of additional types of data, especially data that identify the factors that may



influence research outcomes (Randolph, 2009. p.7). In the experimental research, the reviewer's coding book will extract from each article the measurement instruments used: the independent, dependent, and mediating/moderating variables investigated; the data analysis procedures; the types of experience tall controls; and other data (Randolph, 2009. p.7). Both high-quality and low-quality studies and reporting the difference between the two (Randolph, 2009. p.7). The goal of reviews is to synthesize research outcomes (Randolph, 2009. p.7). The literature review, combined with the research problem should lead to the formulation of an empirical research question, "Can Deep Sea Water be Processed into Potable Water and Distributed into the Middle East" (Randolph, 2009.p.8)?

The study makes a meaningful contribution to knowledge in the field (Randolph, 2009. p.8). Meta-Analysis is used to synthesize and analyze a body of quantitative research (Randolph, 2009. p.9). MDTF supports technical assistance for project preparation, analytical studies, capacity building, and knowledge sharing (The World Bank, 2021. p.1).

### **Independent Variable**

State-of-the-art water innovation study.

### **Dependent Variables**

**Financial and Environmental Risks** - Managing financial risks encompasses the identification, assessment allocation, and practical controls designed and implemented by the project manager together with all the relevant stakeholders of the project (Akomea-Frimong, Jin, Osei-Kyei, 2021. p.2).

**Indicators** - The indicator tracks hostile volatility in inflation, shortages of investment capital, high-interest charges, ever-increasing construction material costs, and huge cost overrun from delays in completion for the project (Akomea-Frimong, Jin, Osei-Kyei, 2021. p.2). Financial risks are assessed based on the occurrence and severity of consequences with both statistical and nonstatistical tools (Akomea-Frimong, Jin, Osei-Kyei, 2021.p.2).

**Geopolitical** - A debate raised during the severe drought recorded in the region in the long term (Al-Masri, Spyridopoulos, Karatzas, Lazari, Tryfonas, 2021.p.2). This debate was raised during the severe drought recorded in the region in the late nineties, when Israel claimed that rainfall was not sufficient to provide Jordon with the amount of water as stated in the water agreement between Jordon and Israel, as a component of the Peace Treaty signed in 1994 (Al-Masri, Spyridopoulos, Karatzas, Lazari, Tryfonas, 2021. p.2). People believe that water is a 'human right' and a commodity to be provided or granted (Al-Masri, Spyridopoulos, Karatzas, Lazari, Tryfonas, 2021. p.2). This argument causes people to negatively react in cases of water shortages or a decrease in the supply and justify the actions by claiming that securing water is a right (Al-Masri, Spyridopoulos, Karatzas, Lazari, Tryfonas, 2021. p.2).

### **Historical Overview**

The expertise that US scientists, farmers resource managers, and other experts had developed over decades of intensive colonial expansion and settlement in the desert Southwest was essential to how they and the political allies narrated the special fit with the needs and interests of State builders in the Arabian Peninsula (Koch, 2021. P.90). Among these skills were how to build elaborate irrigation and pumping networks, and a keen understanding

of the political and symbolic power of water in the desert (Koch, 2021. P.90). Electricity generation from marine technologies increased an estimated 13% in 2019, which is significantly above the levels of the previous three years (IEA, 2021. p.1).

The technology is still not on track to reach the SDS level, which requires a 10% annual increase in generation over 2019-30 (IEA, 2021. P.1).

**Table 6.** Total Energy Supply, 2018

<b>The total Middle East</b>	31 375 235
Islamic Republic of Iran	11 444 635
Saudi Arabia	8 945 734
United Arab Emirates	2 650 753
Qatar	1 635 785
Kuwait	1 477 439
Oman	1067169
Bahrain	599 946

(IEA, 2021. p.1).

Today we have become more advanced, and an investigation will be done to evaluate the results of the current theory. The authors investigate current approaches by Rice University. Air conditioning systems provide a constant source of clean, cold water that is well-suited for reuse (Rice University, 2021. p.1). In the fall of 2008, Rice began capturing condensate water from the air conditioning systems of the Biosciences Research Collaborative to use as make-up water in the cooling towers of the South Plant (Rice University, 2021. p.1). This is a free source of water that Rice otherwise buys from the City of Houston (Rice University, 2021. p.1). Combined, these systems are estimated to save at least 12 million gallons of water per year, which is equivalent to about 5 to 6 percent of Rice's annual water consumption in a typical year (Rice University, 2021. p.1). There are more than 400 dual-flush toilets located in several buildings on campus (Rice University, 2021. p.1). That is enough water to fill an Olympic-sized swimming pool once every 10 months (Rice University, 2021. p.1).

## Conclusion

Creating a new balance of power and removing the restrictions placed by the unipolar world order: it is in the interest of middle powers and small states that there is a shift from a unipolar world order to a multipolar one (Saqr Alsulami, 2021. p.1). China's positions are based on respecting national sovereignty and not interfering in internal affairs (Saqr Alsulami, 2021. p.1). Advancing the strategic independence of Middle Eastern countries: considering what analysts describe as a new world order taking shape- the emergence of US and Chinese camps- there is an opportunity for regional countries to advance the strategic independence and to boost the strategic partnerships so

that they are not compelled to choose between the two camps or pay part of the price amid a possible cold war (Saqr Alsulami, 2021. p.1).

Problems have been encountered on PPP initiatives in Nigeria, especially in the North Central region where PPP infrastructure projects have experienced challenges and failures as a result of stakeholders' opposition and disagreements arising from the neglect of stakeholder's interest (Yusuf, Bashir, Luqman, Abdulganiyu, 2021. p.145). Intrastate tension accordingly takes place which eventually increases dispute between riparian countries and expands interstate conflict (Al-Masri, Spyridopoulos, Karatzas, Lazari, Tryfonas, 2021. p.2).

The Middle East is a vulnerable region to limited water resources, rainfall, and hydro geopolitical tension, to name a few risks (Al-Masri, Spyridopoulos, Karatzas, Lazari, Tryfonas, 2021. p.2).

### ***Summary***

The data on the water demand and supply from water rights to the Jordon River Basin is meant to provide an empirical dimension to the ongoing political dispute (AbuA-Foul, 2022, 443). Different plans have been proposed to allocate the river Jordon water among the riparian states (AbuA-Foul, 2022. p.443). There is a need to develop a conceptual framework upon which an effective strategy to minimize PPP infrastructure projects failure through effective stakeholders' management amidst well designed institutional and regulatory framework and a conducive investment climate (Yusuf, Bashir, Luqman, Abdulganiyu, 2021, p.145).

The most important metrics are uncertainty and volatility. The question that will be answered in section 3 is How long will it take to land a contract?

- What is the size of the contract?
- What is the duration of the contract?
- What is the deal for obtaining a letter of intent?
- Are strong societal license available to operate (Brekelmans, 2018.p.1)?
- How can we get more for each dollar spent (Brekelmans, 2018.p.1)?

“How much of the world's or a country's endowment of non-renewable resources is fair for the current generation to use up, and how much should be left for generations to come who have no active voice in contemporary decisions” ( Dixon, Monk, 2011. p.1).

“How can you best include stakeholders in this mathematical modeling processes distanced from their local realities, though, and ensure a higher probability of future compliance with top-down global decisions that may have local consequences once implemented” ( Tiller, 2021. p.1).

“How does one design and govern an SWF so it will achieve its objectives” (Dixon, Monk, 2011. p.3).

“Which governance practices, in particular, are crucial for success” (Dixon, Monk, 2011. p.3).

The current funding for water desalination through the Middle East is from,

- Prestigious Development
- Building High Tech Projects
- ADB Loan
- Asian Development
- Ministry of Finance
- Production Sharing Agreements
- Exploration and Development
- Cloud Funding
- Blue Bonds
- Bahrain
- Sovereign Wealth Fund Institute
- The World Bank

It takes fine-tuning the research as it can change due to crisis such as the pandemic, oil and gas declining, Republican wealth pulling out. When these issues transpire it can destroy relevant intent. The resolution would be for everyone to have a common goal and express the urgency on such a critical issue.

Can anyone live without water? Much of Vision 2030 revolves around the idea of building Saudi Arabia into a global transportation and tourism hub, connecting Europe, Africa, and Asia (World Finance, 2020. p.1). The spread of SARS CoV-2 has blighted the transport industry: air travel, for example, is not expected to return to 2019 levels until at least 2023, according to the International Air transport Association (World Finance, 2020. p.1).

Over time, austerity measures and reduced consumer spending could take a toll on the private sector (World Finance, 2020. p.1).

### **3. Research Methods**

#### **Research Method and Design Appropriateness**

**Testing Hypothesis.** One hypothesis, mostly found in the operations research and computer science communities, is that with the wide availability of data and advances in computing technology, algorithmic forecasts offer the opportunity to support humans by mining large data sets and learning patterns and trends from data (Zellner, Abbas, Budescu, Galstyan, 2021. P.2).

#### **Research Method**

Results show an almost 10-fold increase in the application-focused forecasting literature between the 1900s and the current decade, with a clear rise of quantitative, data-driven forecasting models (Zellner, Abbas, Budescu, Galstyan, 2021. p.1). Cooperative studies of quantitative methods and human judgment show that (1) neither method is universally superior, and (2) the better method varies as a function of factors such as availability, quality,

extent, and format of data, suggest that (3) the two approaches can complement each other to yield more accurate modes (Zellner, Abbas, Budescu, Galstyan, 2021. p.1). To predict an uncertain quantity or to determine its distribution people (and organizations) often seek the advice of human experts and/or apply algorithmic procedures (Zellner, Abbas, Budescu, Galstyan, 2021. P.2).

The choice of algorithmic procedures and how to combine algorithmically derived forecasts with human expertise is contentious across academic disciplines (Zellner, Abbas, Budescu, Galstyan, 2021. P.2).

### Design Appropriateness

The indicators are investment, growth rate, landowners, technology, and unemployment. A concentration on sovereign wealth funds, phenomenology, ethnography, grounded theory of case studies, gaps, data networks, high-profile joint agreement, geopolitical, renewable energy, chi-square, and cosmopolitan.

The goal of the article is to design a comprehensive scope with value, synergy, computation, and deliver an innovative approach with artificial intelligence. Machine learning is the form of narrow artificial intelligence which allows machines to learn from data- has enormous potential to transform urban life (The Royal Society, 2016. p.1).

Machine learning is already being used in the energy sector to optimize power grids and could support decarbonization by providing utilities more intelligently (The Royal Society, 2016. p.1). Machine learning could track waste levels in recycling bins and tailer collection services based and waste predictions (The Royal Society, 2016. p.1).

The article is a blueprint for methodology and framework.

The structure is: Background of the study, Problem statement, Purpose of the dissertation study, Significance of the study, Nature of the study (Capitol Technology, 2022. p.1), Denoting excellence, Potential for publishing, Organization of the dissertation.

The study is meant to inform and then after the available material has been saturated it is to recommend future research. The question, “Are there any important links missing and if the strength of relations was correctly represented?”

<b>Scope</b>	Chi Square
<b>White Paper</b>	Value
<b>Circular Technology</b>	Synergy
<b>Artificial Intelligence</b>	Historical
<b>Synthetic Intelligence</b>	Indicators
<b>Roadmap</b>	Cosmopolitan
<b>Computational</b>	Value

## Population, Data Collection Procedures, and Rationale

The Middle East partnered with a team from the U.S. National Aeronautics and Space Administration (NASA) DEVELOP program in 2016 to enlist satellite data as they consider where and what to build next (WRAP, 2018. p.1). To find these rainy spots, the team considered such factors as historical precipitation, availability of groundwater, and evapotranspiration- the amount of water evaporating from surface-level vegetation that increases moisture in the atmosphere (WRAP, 2018. p.1).

**Table 7.** Allocation of the Different Plans and Resources

Vision 2030 red sea Dead Sea						
The Water Action Project, Inc Wrap (WRAP)						
Tropical Rainfall Measurement Mission (TRMM)						
Global Precipitation Measurement (GPM)						
Ratio of Water Demand to Supply, Per Capita Water Availability in 1990, 2000, and in 2025, and Population in 2000 and 2010 in Jordon & Israel (AbuA-Foul, 2022. p.1).						
Country	The ratio of Water Demand to Supply				Total Population (Millions)	Population Growth Rate (Annual %)
Jordon	110	260	143	80	3	3
Israel	110	470	449	310	2	2

(AbuA-Foul, 2022.p.1).

**Table 8.** Contract Awarded Blueprint

Contract Awarded				
Blueprint	Company	Alliances	Terms	
Geography				
	Saudi PIF (Public Investment Fund)_owned National	Al-Khorayef Alliance French Veolia Saudi Miahona Alliance	SR 579 million/7 Years	Riyadh



	Water Company (NWC)	French Group Saur Philippine Company Manilawater		(Arab News, 2021. P.1).
The Red Sea/Dead Sea		Source Water Company	Budget Cut from \$50.M to \$8.M/% Years	Saudi Arabia  (World Finance, 2022. p.1).
Schlumberger		Saudi Armaco		Schlumberger, 2017
UAE Net-Zero Emissions by 2050		UAE Energy Strategy 2050		
UAE Water Security Strategy 2036				

Prosperity Green

Prosperity Blue

Arabian Accords 180MM 2020 (UDASIN, 2021.p.1)

## Population

**Table 9.** The World Bank reports the population in Israel at 4,587,522 in 2020 (The World Bank, 2021).

<b>Afghanistan</b>	2020	19,976.26
<b>Bahrain</b>	2020	1,100,47
<b>Kuwait</b>	2020	2,614,45
<b>Lebanon</b>	2020	3,435,75
<b>United Arab Emirates</b>	2020	6,836,35

<b>Middle East &amp; North Africa</b>	2020	240,679,66
<b>The Middle East &amp; North Africa (excluding high income)</b>		199,610,78

(The World Bank, 2021).

Since 1946, the United States has provided an estimated total of \$346 billion (about \$1,100 per person in the US) (obligations in current dollars) in foreign assistance to the Middle East and North Africa (MENA) region (Sharp, Humud, Collins, 2020. P.1). For FY2021, overall bilateral aid requested for MENA countries amounts to \$6.6 billion (about \$20 per person in the US), or about 15% of the State Department's International Affairs budget request (Sharp, Humud, Collins, 2020. P.1). The State Department estimates that the Middle East stands to receive 42% of the geographical specific assistance in the budget request, more than any other region (Sharp, Humud, Collins, 2020. P.1). As in the previous years, more than 90% support assistance for Israel, Egypt, and Jordan (Sharp, Humud, Collins, 2020. P.1). The region also received a sizable portion of annual emergency humanitarian assistance appropriate, which is not included in region-specific aid figures (Sharp, Humud, Collins, 2020. P.1). The important metrics are green power, climate change, and renewable energy.

There are agreements with no real terms. Sukuk is being analyzed for financial stability with industrial investing (Basyariah, Kusuma, Qizam, 2021. p.1). GDP per-capita, exchange rate, and inflation as the proxies for macroeconomic stability sourced from The World Development index, and dimensions of worldwide governance indicators (WGI) as institutional proxies' source from WGI- World Bank (Basyariah, Kusuma, Qizam, 2021. p.1). (POP) variable is included as a control variable (Basyariah, Kusuma, Qizam, 2021. p.1).

Today, the Sukuk market represents the economy's wheels and the second-largest Islamic finance industry component after Islamic banking (Basqariah, Kusuma, Qizam, 2021. p.1). The government is implementing regulations to force the upgrade into Vision 2030. The Asian Development Bank (2005) revealed that among the essential factors for improving the investment climate are macroeconomic stability and government institutions (Basyariah, Kusuma, Qizam, 2021. p.1). Another macroeconomic variable as the volatility factor is that inflation hurts financial developments (Basyariah, Kusuma, Qizam, 2021. p.1).

Stable-economic conditions will positively affect the development of the country's economy and finances (Basyariah, Kusuma, Qizam, 2021. p.1). Unstable macroeconomic conditions can be seen from high inflation and a weakening exchange rate that will harm the development of the country's economy and finance (Basyariah, Kusuma Qizam, 2021. p.1).

Various measures are used as institutional indicators (Basyariah, Kusuma, Qizam, 2021.1). Kaufmann et.al. (2004) has designed the World Governance Indicator (WGI) by reporting aggregate and individual performance indicators; the six dimensions of governance have encountered been adopted by World Bank and, namely voice and accountability, Rule of Law, Regulatory Quality Political Stability and Absence (Basyariah, Kusuma, Qizam, 2021. p.1). The World Bank approved a US\$15 million grant to the Water Security Development-Gaza Central Desalination Program- Associated Works Phase 1 Project (The World Bank, 2021. p.1). Donors have contributed US\$43 million and members of the Partnership for Infrastructure Development Multi-Donor Trust Fund

administered by the Bank, and US60 million in parallel financing from the Kuwait Fund for Arab Economic Development (The World Bank, 2020.1).

The project will provide additional freshwater of 30 million cubic meters (MCM) per year to 16 municipalities in the southern and middle governorates of Gaza by supporting the construction and rehabilitation of necessary infrastructure (The World Bank, 2020.p.1). “Almost everyone in Gaza is relying on water from expensive and unregulated small-scale private providers” (The World Bank, 2020. p.1). The Abraham Accords- a joint declaration of the United States, Israel, and the United Arab Emirates, was signed alongside a peace agreement, although there has never been a state of war or conflict between Israel and the UAE (Bayrak, 2021. p.1).

Geopolitical changes in the Middle East over the last decade have altered the threat perspective of the Arab monarchies (Bayrak, 2021. p.1). Israel and the Arab states due to the ignorance of the Palestinians’ interests, there are weaknesses of the Accords due to its impatient timing, and its contradiction with the international community, such as the UN, and its disregard of the two-state solution (Bayrak, 2021. p.1). Israel’s security has always been a building block in the United States ‘(US) foreign policy decisions with regards to the Middle East (Bayrak, 2021. p.1).

The Abraham Accords promotes the formation of a regional coalition of Israel and the Arab nations that are close to the US, and to create a balance of power catalyst other regional powers that have sought to exert influence on the detriment of Western interests (Bayrack, 2021. p.1). The World Bank supports programs and activities in its member countries designed to achieve a positive social and environmental impact in line with the World Bank’s twin goals of eliminating extreme poverty and promoting shared prosperity (International Bank for Reconstruction and Development (IBRD), 2021. p.1). These “twin goals” are aligned with the Sustainable Development Goals (SDGs) (International Bank for Reconstruction and Development (IBRD), 2021. p.1).

World Bank bonds are consistent with the sustainability bond guidelines published by the International Capital Markets Association (International Bank for Reconstruction and Development (IBRD), 2021. p.1). A key priority for the capital markets is to build strategic partnerships with investors to raise awareness for the role of private sector financing in sustainable development (International Bank for Reconstruction and Development (IBRD), 2021. p.1). The International REC Standard is built on a list of rules, regulations and best practices set by The International REC Standard Foundation (EWEC, 2022. p.1).

## Study Rationale

**Table 10.** Methodology Conceptual Design

Planning Research	Research Design	A Journal Source	Data Collection
Accurate	Topography	Regulatory Framework	De-Securitization
State-of-the-Art Water Equipment	White Space	Population Growth	Historical Landowners

Relevant	Public	Mitigating Risk	Geopolitical
Roadmap	Private	Pro Quest	Geographical
Significance	Co-Sharing	Google Scholar	Theoretical Methods
	Defining Terms	Royal Society	Conflict
	Snowball	Stanford	Climate Change
	Mangrove		Conflict
	Synthesis		Political Stability
	Coding		Water Governance
	Hypothesis		Sensitive Political
	Maslow's Theory		Blocks Framework
	Environmental Strategy		
	Holistic Perspective		
	Road Initiative		

**Table 11.** Terms

Quantitative Analysis	Defending Proposal
Feasibility Study	Long-Term Profitability
De-Risking	Memorandum of Understanding
No- Project Results	Phenomenology
Analyzing	Next Literature Review
Chi-Square	Chi-square test can be valid and universally consistent for testing independence, and establish a testing power inequality with respect to the permutation test (Shen.C etc al, 2021.p.1). The statistical hypothesis for testing independence is $H_0: F_{XY} = F_{XFY}$ , $H_A: F_{XY} \neq F_{XFY}$ . (Shen.C etc al, 2021. p.1).
Meta-Analysis	
Questions	
Rhetoric	
Conservatism	
Bureaucracy	

Significance	Recognize, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity, supporting international collaboration, demonstrating the importance of science to everyone (The Royal Society, 2021. P.1).
Probability	
Theory	
Epistemology	Strategies are able to partially mitigate reasonable doubt, we can take a theory regarding the phenomena to be established by experiment (Evans, The Bault, 2020, p.1). Next generation of analogue experiments to provide genuine knowledge of unmanipulable and inaccessible phenomena such that the relevant theories can be understood as well as supported (Evans, The Bault, 2020. p.1).
Flux Coupling Analysis Influence	Identify pairs of reaction for which the activity of one reaction necessitates the activity of the other (Tefagh, Boyd, 2018. p.1).
Grounded Theory	

**Table 12.** Literature Review Scoring

Category	Criterion	1	2	3
<b>Coverage</b>	World Bank, 2021, Verified exclusion and inclusion.	A portion of the information has been used. There is still more transparency needed.	Discussed the funding of Vision 2030.	Explained project details and coverage.
<b>Synthesis</b>	ICI Global, (2021), explains de-securitization.	The information assisted in de-risking the Middle East.	Geopolitical and co-sharing have been investigated.	It put the Middle East at high risk due to geopolitical.
<b>3. Methodology</b>	Randolph, 2009, Recommended methodologies, graphs & tables.	Research and theoretical methods discussed.	A portion of research techniques was used.	Verified research methods.
	Academic Review Checklist	Guidelines for the dissertation, and institutional	Research methods.	Writing Style and Composition.

		progress.		
<b>4. Significance</b>	The Development Sea Company, (2021), Sets new standards for infrastructure and sustainable water.	Quantitative significance to the research study.	Implemented the new findings to the research.	Appropriateness of the information and research methods to verify the relevance of the research
<b>5. Rhetoric</b>	Faudot, 2019, Explains a regime trap.	The new standard with regulation.	Obtainable results in commonality such as securing protected marines.	Explained the regulation in detail.

(The World Bank, 2021.p.1).

Traditionally, the Gulf Cooperation Council (GCC) countries, except for Kuwait, relied less heavily on BITs (Kluwer. 2020. p.1). This may reflect the fact that as resource-rich countries, these states felt less compelled to enter into such binding agreements (Kluwer, 2020. p.1). Some of the BITs that have been entered into by Arab countries refer to International Center for Settlement of Investment Disputes (ICSID) procedures (Kluwer, 2020. p.1). In *Desert Line Projects LLC v Republic of Yemen*, which involved an Omani company, the basis of authority was an ICSID clause in the Oman-Yemen BIT 1998, which had been concluded in the Arabic language (Kluwer, 2020. p.1). In that case, the ICSID Tribunal held that the conduct of Yemen is pressuring the Omani investor to accept and execute a settlement agreement, instead of a final and binding Yemeni award, accounted to a breach of a provision of the Oman - Yemen by impressing on both Oman and Yemen a duty to ensure “fair and equitable treatment” for the investments of the other contracting states investors, and to eschew “legally unjustified measures” (Kluwer, 2020. p.1). The case was in any event discontinued because of a settlement reached between the parties during the proceedings (Kluwer, 2020. p.1).

### Validity: Internal and External

#### Data Analysis

Against the extremely limited access to safe drinking water in Gaza, the World Bank today announced a US\$15 million grant to the Water Security Development- Gaza Central Desalination Program - Associated Works Phase 1 Project (The World Bank, 2020. p.1). The new project that aims to improve the quality and quantity of water in Gaza will benefit from a coordinated aid of US\$42 million from donors' members of the Partnership for Infrastructure Development Multi-Donor Trust Fund (PID MDTF), administered by the Bank, and US\$60 million in parallel financing from the Kuwait Fund for Arab Economic Development (World Bank, 2020. p.1). It aims at constructing a desalination plant with an initial capacity to produce 55 MCM per year (World Bank, 2021. p.1).



The Associated Works project will construct a south water carrier, including storage reservoirs to convey and properly blend the above-mentioned desalination water along with water purchased from Mekorot (The Israeli national water company) and groundwater sources (World Bank, 2021. p.1). The article, “Desert geopolitics: Arizona, Arabia, and an arid-lands response to the territorial trap,” Lewis and Wigen’s article introduces a “maritime” response to these challenges, stemming from a project supported by the Social Science Research Council called Oceans Connect (Koch, 2021. P.1 89). The present article takes inspiration from the oceans Connect approach to the challenges of area studies today, as well as the need to rethink the territorially trapped visions of geopolitics beyond the state system (Koch, 2021. P.90).

Monitoring and understanding changes in Ecological indicators are needed to support decision-making during the project (Papagiannopoulos. Raitsos Krokos Gittings, Brewin Papadopoulos, Pavlidou Selmes, Groom, Hoteit, 2021. p.1). NEOM (short for Neo-Mustaqbal) is a \$500 billion (about \$1,500 per person in the US) coastal city megaproject, currently under construction in the northwestern part of the Red Sea, off the coast of Tabuk province in Saudi Arabia, and its success will rely on the preservation of biodiverse marine ecosystems (Papagiannopoulos. Raitsos Krokos Gittings, Brewin Papadopoulos, Pavlidou Selmes, Groom, Hoteit, 2021. p.1). Ideally. Ecological indicators should be easily understood, quantified in standard units, have an immediate response to changes, measured at adequate frequencies and low costs, and applicable to locations to allow comparisons (Papagiannopoulos, Raitsos Krokos Gittings, Brewin Papadopoulos, Pavlidou Selmes, Groom, Hoteit, 2021. p.1).

“NEOM, which is short for the Ancient Greek-Arabic term Neo-Mustaqbal” (“New future”), is a \$500 by megaproject that aims to build a fully automated city, operating as an independent economic zone in the NRS (Papaginnopoulos, Krokos Gittings, Brewin, Papadopoulos, Pavlidou, Selmes, Groom, Hoteit, 2021. p.1). It is estimated that around 70% of Saudi Arabia's drinking water demands are met by desalinated water, and NEOM will rely on desalination plants for freshwater (Papaginnopoulos, Krokos, Gittings, Brewin, Papadopoulos Pavlolidou, Selmes, Groom, Hoteit, 2021. p.2).

The process of desalination releases brine as a by-product and can produce harmful pollutants, such as chlorine and copper (Papaginnopoulos, Krokos, Gittinhs, Brewin, Papadopoulos, Pavlolidou, Selmes, Groom, Hoteit, 2021. p.2)

## Data Analysis

<b>Champion in the Middle East.</b>	Agents trying to run the market.
-------------------------------------	----------------------------------

The renters' structures forged by oil rent for decades are well established and difficult to displace (Faudot, 2019. p.2). Saudi implements the French Regulation Approach that builds an accumulation regime (Faudot, 2019. p.1). This approach is relevant to grasp the institutional arrangements of an economy as a whole and its contradiction (Faudot, 2019. p.2).

The regulation approach was born in France in the 1970s, influenced by the Marxist theory of growth and capitalist accumulation (Faudot, 2019. p.2). One of the aims of the regulation theory is to describe (Faudot, 2019. p.2). Regulation theory matches with Marx's claim that a dynamic of accumulation is intrinsically condemned to a crisis

(Marx, 1996, p.455, Faudot. 2019. p.4), and that a comprehensive economic analysis of a country includes the analysis of its crisis (Faudot, 2019. p.4).

A set of social practices constitute the Saudi mode of regulation: “A large public sector employing Saudi natives” (Faudot. 2019. p.4). Civil servants represent circa 40% of Saudi employees (Sama, 2017, p.41, Faudot, 2019. p.4).

Saudis represented 94.6% of government sector employees in 2016 while they represented only 16.8% of private-sector employees (Faudot. 2019. p.4). "To smooth public spending, the management of oil revenues between, on the one hand, accumulation of reserves in Central Bank accounts and sovereign wealth funds in a period of soaring prices, and on the other hand fiscal deficits each time it is necessary (Faudot, 2019. p.6). The peg of the Royal to the US dollar guarantees the economic integration to globalization (Faudot, 2019. p.6).

The SAMA (Saudi Arabia Monetary Authority) intervenes on the exchange market to maintain the peg-which has remained the same since 1986 (1\$=3.75SAR); A heavy reliance on contractual immigration for services and low paid jobs, mostly in the private sector (Faudot, 2019.5). The sector is weakened as soon as the government stops its grants (Faudot, 2019. p.5). The mode of regulation is, “the set of procedures and individual and collective behaviors that serve to reproduce fundamental social relations through the mode of production in combination with historically determined institutional forms” (Boyer and Saillard, 2002. p.341, Faudot. 2019. p.4).

Support and 'steer' the prevailing regime of accumulation (Boyer and Saillard, 2002. p.341, Faudot. 2019. p.4). “Ensure the compatibility over time of a set of decentralized decisions, without the economic actors themselves having to internalize the adjustment principles governing the overall system”(Boyer and Saillard, 2002, p.341, Faudot. 2019, p.4). "The social and economic patterns that enable accumulation to occur in the long term between two structural crises (Faudot, 2019. p.2). These regular patterns are summarized by the notion of an accumulation regime" (Boyer and Saillard, 2002, p.38, Faudot, 2019, p.2). Before an investor can commit to a development project, they must understand the culture. When the study delves into geopolitical you will see how important true relevant and accurate knowledge having is. Such as are you without water because it is a religious choice as you find water unnatural? Obviously, in this situation, a desalination plant works or you get the community volatile. That is what this study does for you. Its purpose is to bring you the information of making informed decisions with great judgment calls.

The research study has gone through transitions. From average rating to escalating it to elevated risk due to geopolitical. The fun part of the research will be in the continuation such as for those Mormons not interested in the water can we assign a protected private Island while developing the rest of the area?

The study is the first such analysis that focuses on small-scale conflicts involving little or no physical violence, such as protection or demonstrations (Ide, Lopez, Frohlich, Schffran, 2021. p.568). These nonviolent conflicts are politically relevant yet understudied in the literature on climate change and conflict, environmental security, and political stability (Ide, Lopez, Frohlich, Schffran, 2021. p.568).

The study employs the method of quantitative comparative analysis (QCA) to integrate quantitative and qualitative data at various scales (national, regional, local) for a sample of 34 cases (17 of which experienced conflict onset) (Ide, Lopez, Frohlich, Schffran, 2021. p.568).



*(The Church of Jesus Christ of Latter-Day Saints, 2021).*

Our findings show that pre-existing cleavages and either autocratic political systems or cuts of the water supply are relevant predictors of nonviolent, water-related conflict onset during droughts (Ide, Lopez, Frohlich, Schffran, 2021. p.568). The study argues that drought conflict links are highly context-dependent even for nonviolent, local conflicts, hence challenging determinist narratives that claim interlinkages between climate change, hydro-meteorological distances, and conflict (Ide, Lopez, Frohlich, Schffran, 2021. p.568). Quantitative data on the regime type currently in power are obtained from Autocratic Regime Data, which is currently the most widely accepted dataset on the presence or absence of autocratic regimes (Geddes, Wright & Frantz, 2014), (Ide, Lopez, Frohlich, Schffran, 2021. p.568).

Renewables are the backbone of any energy transition to achieve net-zero (IEA, 2021. p.1). As the world increasingly shifts away from carbon-emitting fossil fuels, understanding the current role renewables play in the decarbonization of multiple sectors is key to ensuring a smooth pathway to net-zero (IEA, 2021. p.1). Future research is recommended in analyzing storage, producing hydrogen from renewable electricity, stimulus packages, aviation biofuels, and residential heating (IEA, 2021. p.1).

As the world becomes increasingly digitalized, data centers and data transmission networks are emerging as an important source of energy demand (IEA, 2021. p.1). Government officials from Israel, Jordon, and the United Arab Emirates signed a letter of intent at the Dubai Expo on Monday, paving the way for the future export of Jordanian solar energy in exchange for Israeli desalinated water (UDASIN, 2020.p.1). Not only would the move help water-starved Jordan, but it would also shift Israel's historic neighborhood status as an energy island and help the country meet climate targets (UDASIN, 2021. p.1).

We achieve excellence every day through our partnership with our prime contractor and Joint Venture partner contractor and joint venture partner Korea Electric Power Corporation (KEPCO), who continue to deliver the benefits of their experience and expertise to the UAE program and through our regular interactions with the global nuclear industry (Emirates Nuclear Energy Corporation, 2021. p.1). Abu Dhabi Investment Council invests globally, there is a strong focus on investing in Abu Dhabi's economy (Abu Dhabi Investment Council, 2022. p.1). Some of its significant investments include substantial stakes in prominent organizations such as,

- First Abu Dhabi Bank
- Abu Dhabi Commercial Bank
- Al Hilal Bank
- Abu Dhabi National Insurance Company
- Abu Dhabi Aviation Company

Abu Dhabi Investment Company (Investment AD). (Abu Dhabi Investment Council, 2022 p.1). Active investment strategies aim to generate superior risk adjusted returns by investing in hedge funds and similar active trading mandates across different strategies (Abu Dhabi Investment Council, 2022.p.1).

The function co-invests in individual transactions by partnering with hedge funds and takes general partner stakes in hedge funds and/or seed hedge funds (Abu Dhabi Investment Council, 2022. p.1). Some of the Global strategies include the following,

- Relative Value Strategies
- Hedged Equity Strategies
- Macro Strategies
- Event-Driven Strategies
- Systematic CTA (Abu Dhabi Investment Council, 2022. p.1).

Abu Dhabi Investment Council's mission is to assist the government of Abu Dhabi in achieving continuous financial success and wealth protection while sustaining prosperity for the future (Abu Dhabi Investment Council, 2022. p.1). The vision is to be one of the world's foremost effective and efficient investment institutions capable of managing assets and generating high and consistent returns over the long term (Abu Dhabi Investment Council, 2022. p.1).

### ***Summary***

No country can solve these problems alone, and Americans cannot afford to be absent from the world stage (President Biden, 2021). Investigating in strengthening our leadership abroad is also an investment in bolstering our security and prosperity at home (President Biden, 2021). As President, I am determined to repair our alliances, renew our leadership in international institutions, reclaim our creditability and equip the American middle class to succeed in a global economy (President Biden, 2021). For the Middle East to generate peace it is recommended that they cherish values: defending freedom, championing opportunity, upholding universal rights, respecting the rule of law, and treating every person with dignity (President Biden, 2021).

We have returned diplomacy to the center of our foreign policy and are committed to meeting today's global challenges from a position of strength, working in close cooperation with our allies and partners (President Biden, 2021). We will always stand with our friends around the world to protect our values and to advance peace, security, and prosperity for all (President Biden, 2021).

As part of the agreement, Jordan would export about 600 megawatts of electricity generated from solar energy, while Israel would evaluate the export of up to 200 million cubic meters of desalinated water to Jordan, a point news release from the Israeli Energy Ministry and the UAE Foreign Ministry said (UDASIN, 2021. p.1). The collaboration was made possible due to the August 2020 Abraham Accords, which the countries described as “opening a new area of cooperation between the United Arab Emirates and Israel (UDASIN, 2021. p.1). “This is a message to the universe about how countries can work together to combat the climate crises.”

Israeli Energy Minister Karine Elharrar said in a statement. “Israel and Jordan are two countries with different needs and capabilities that can help each other cope with challenges in a greener” (UFASIN, 2021.p.1). MIPCO incurs liabilities for failing to achieve targeted power and water availability, budgeted operating costs, and if fuel demand is greater than projected demand (MIPCO, 2022. p.1).

Since November 3, 2019, our entire plant has been operated by the Operator at arms’ length following the Operation and Maintenance Agreement, the term of which is 25 years from the Commercial Operation Date (MIPCO, 2022. p.1).

#### **4. Research Results**

##### **Definitions**

Synergy- Businesses are facing new and tougher chemistry-based challenges often affecting multiple industries and supply chains (Royal Society of Chemistry, 2022). Through Synergy, businesses develop new ways of working collaboratively to reduce risks, cut costs and bring solutions to market faster (Royal Society of Chemistry, 2022).

Value - Empirical and theoretical work indicates that a good reputation is valuable in that it increases one’s expected payoff in the future (Pfeiffer, et al., 2012. p.1). Trading can have a positive or a negative effect on the overall frequency of cooperation (Pfeiffer, et al., 2012. p.1).

##### **Results**

The categories analyzed are research design, company profile, market share, segmentation, geographical and trajectory business sphere. Accessing the data, analyzing the scope and implementing the various smart tools we analyze the 4 players in the industry,

##### **China National Offshore Oil Corporation**

**Baker Hughes (GE)** - The Renaissance itself unfolded over years, decades, centuries, took more than 100 years to complete and would not have risen without building on strong foundations- and I mean that both literally and metaphorically (Brekelman’s, 2018. p.1). Method- The neighboring Olympus tension-leg platform that we particularly learnt from with the capital efficiency approach (Brekelman’s, 2018. p.1). As well as our competitive scoping and efficient execution, we transformed how we interacted with our supply-chain (Brekelman’s, 2018.p.1).

The transformation emphasizes the importance of partnership and collaboration with contractors (Brekelman’s, 2018.p.1). We see digitalization as one of our key drivers for improving capital efficiency and boosting operational excellence (Brekelman’s, 2018. p.1). We now have sensors that work in the deepest waters, drones that work in the



deepest waters, drones that patrol our most distant oil and gas fields and computerized tools that make use the smallest pieces of data (Brekelman's, 2018. p.1).

We implemented the Vero app (Brekelman's, 2018. p.1). These fluctuations can be picked up by Veros sensors wherever the power cable happens to be, which might be in a far more accessible location than the motor (Brekelman's, 2018. p.1). We estimate that Veros could deliver an additional \$300 million a year of production that would otherwise have been lost by unplanned shutdowns (Brekelman's, 2018. p.1).

**Royal Dutch Shell Plc** - In Iraq, small and medium-sized enterprises (SMEs) have struggled to develop due to political instability, insufficient infrastructure, and lack of access to finance and institutional support (USAID, 2022. p.1). Basrah, the second largest city in Iraq known for its wealth in oil production, economic life continues to lag due to outdated production methods and machinery in other industries and ongoing significant social and political instability (USAID, 2022. p.1). Shell has a 34% interest in Petroleum Development Oman (PDO): The Omani government has a 60% interest (Shell, 2022. p.1).

PDO is the operator of more than 200 oil fields, mainly located in central and southern Oman, over an area of 90,874 square kilometers (Shell, 2022. p.1). The concession expires in 2044 (Shell, 2022. p.1). Signed an Exploration & Production Sharing Agreement for Block 55 in the south-east of the Sultanate (Shell, 2022. p.1).

Oman Shell now has a 100% working interest in and operatorship of Block 55 with a total area of 7,564 square kilometers (Shell, 2022. p.1). The agreement includes a work programme of regional studies, seismic acquisition and other potential exploration activities (Shell, 2022. p.1). This agreement is awaiting ratification via Royal Decree (Shell, 2022. p.1). Middle East Investment Initiative (MENA 11)-Iraq partnered with The Shell Foundation, implemented by GROFin in collaboration with the Nomou Fund Osool (USAID, 2022. p.1).

Locations - Basrah, Ninewa Plain, and Northern Iraq (USAID, 2022. p.1).

Budget: \$21 million (USAID, 2022. p.1).

**Schlumberger Ltd**-Agreement reinforces In-Kingdom Total Value Add program and confirms long-term commitment to the kingdom of Saudi Arabia (Schlumberger, 2017. p.1). In 1964, the Arabian Drilling Company was established as a partnership between the General Petroleum and Minerals Organization (Petromin) and Schlumberger affiliate companies (Schlumberger, 2017. p.1). Later in 2006, Schlumberger pioneered its Dhahran Carbonate Research Center, located close to King Fahd University with a focus on Geology and Rock Physics and Production Completion and Recovery projects in the Middle East Region (Schlumberger, 2017. p.1). The Middle East CRE is the largest state-of-the-art facility in the Schlumberger network (Schlumberger, 2017. p.1).

### *Summary*

Today's agreement is a welcome example of how cooperation can accelerate the energy transition and build greater resilience (UDA, 2021. p.1). Algorithm can be a possible solution for a process that will distribute quality water to others (Tefagh, Boyd, 2018, p.1). If a system works it is possible that it can work within another environment geographically with a step by step process.

## 5. Analysis and Conclusions

“This declaration is just one of the positive outcomes of the Abraham Accords that is serving to reinforce regional peace, stability, and prosperity while improving the lives and the prospects of all the people of the region,” Zayed said in a statement (UDASIN, 2021. p.1). Models are developed based on quantitative statistical data sources from databases on environmental indicators or economics to assess how a given SDG (sustainable development goals) can be achieved (Tiller, et al, 2021. p.1). The process removes the local realities from the equations (Tiller, et al, 2021. p.1). When researching stakeholder involvement and their ability to form policy, their opinions often get reported as a single assessment, like counting the fish in the ocean once and stating that as a permanent result (Tiller.et.al, 2021. p.1).

### *Limitations*

#### *Risks*

Not able to execute the original plan that depends on the rapid and international expansion (Swvl Inc, 2021. p.1).

- Unable to attract qualified investors (Swvl Inc, 2021. p1).
- Unable to develop new offerings (Swvl Inc. 2021. p.1).
- The difficulty of obtaining required registrations, licenses, permits, or approvals (Swvl 2021. p.1).
- Operates in and intends to expand into jurisdictions that are, or have been, characterized by political instability, may have inadequate or limited regulatory legal frameworks, and may have limited if any. Treaties or other arrangements in place to protect a foreign investment or involvement (Swvl, 2021. p.1).
- An elevated level of corruption (Swvl, 2021. p.1).
- Unknown risks (Swvl, 2021. p.1).

Data accessibility issues of smart cities, utilities, and transport (The Royal Society, 2022. p.1). Data alone is not enough (The Royal Society, 2022. p.1). Big data does not mean extensive knowledge: public bodies and private companies need to formulate useful questions to interrogate data, to generate the desired outcome (The Royal Society, 2022. p.1). Some machine learning systems can produce highly accurate results but suffer from a lack of transparency in how these results were created (The Royal Society, 2022.p.1). The low interpretability of such systems can create issues with verification or certification, and increasing the time taken to secure regulatory approval could discourage innovative services or products (The Royal Society, 2022. p.1).

### *Findings and Interpretations*

On September 15th, representatives of the United States, Israel, Bahrain, and the United Arab Emirates, signed the Abraham Accords at the White House (Samadi, 2022. p.1). The Accords is a significant political document (Samadi, 2022. p1). Oil-dependent Arab nations are now looking to Israeli innovation to diversify their economies, and pursue a new path to prosperity (Samadi, 2022. p.1). Israel Investment Fund Group (IIFG) is Los Angeles-based Venture Capital and Private Equity firm that invests solely in Israeli companies (Samadi, 2022. p.1).



While every measure Israeli is a fertile investment environment, investment capital that brings valuable ideas to reality (Samadi, 2022. p. Israel is a beacon of technological wealth in the Middle East, (Samadi, 2022. p.1).

Water Companies

Baraka Nuclear Energy Plant

Noor Abu Dhabi

MIPCO

Shams 1

Masdar PV

Umm AL Nar

EWEC - EWEC partners with 16 plants for the supply of water and electricity across the UAE (12 current and four soon (EWEC, 2022. p.1).

Fujita Water and Electricity

Generation Complex

ADQ

Al Shuweihat Power and Water Complex

Al Taweelah Power and Desalination Complex

### ***Conclusions***

The main conclusion can be summarized as the distribution of quality water can overcome challenges and become available to everyone. The methodology enables us to interpret participatory conceptual maps and identify problems, to develop practical and robust business road maps and strategic policy recommendations (Tiller et al., 2021. p.3). The process of using a mix of qualitative and quantitative methods to obtain some holistic result is not unproblematic, but it's also no longer unusual and is now an accepted methodological approach (Tiller et al., 2021.p.2).

Smart cities are melting pots of many complex and inter-dependent problems (The Royal Society, 2016. p.1).

### ***Recommendations***

Smart cities are an option. Water can be controlled with indicators that help identify leaks and can dramatically reduce the bill. Smart cities can also detect issues within the infrastructure.

### ***Recommendations for Future Research***

The study demonstrates the feasibility of the distribution of quality water with various means. It is recommended that more research is done in the area of finance. The example of Swift and Russia is evidence that banking can change and delay or destroy a project. U.K. Prime Minister Boris Johnson called for Russia to be kicked off Swift while announcing London's package of sanctions on Russia's banks, and Czech President Milos Zeman also said that Russia should be cut off from Swift (Curry, 2022. p.1).

### ***List of Figures***

According to the Economist, more than \$140 trillion dollars was transmitted across international borders in 2021, equal to 152% of global domestic product (GDP), and approximately 90% of those transfers went through SWIFT (Curry, 2022. p.1). Iran was removed from the system in 2012 and lost half of its oil export revenue and 30% of its foreign trade (Curry, 2022. p.1). According to the Treasury Department, on a daily basis, Russian financial institutions conduct \$46 billion in foreign exchange transactions around the world, 80% of which are denominated in U.S. dollars (Curry, 2022. p.1).

### ***Summary***

In the end, cooperation between scholars with different theoretical and methodological approaches is key to study, and eventually address, intertwined global problems such as exclusion, poverty, climate change, and conflict (Ide, Lopez, Frohlich, Schffran, 2021. p.568). One concern is giving appropriate credit, sharing data do not mean diminishing the originator (Ide, Lopez, Frohlich, Schffran, 2021p. 568). Ensuring that water is part of the broader humanitarian development policy discussion and plans is vital for stabilizing economies, rebuilding livelihoods, and forgoing a green, resilient, and inclusive future for all (The World Bank, 2021. p.1)

See Appendix A-C for additional sample items.

Money moves around the world because of Swift's Network (Curry, 2022. p.1). Operated by the Society for Worldwide Interbank Financial Telecommunication, this vast communications network facilitates international payments among thousands of banks and financial institutions worldwide (Curry, 2022. p.1). The Swift network enables the transfer of money and securities among approximately 11,000 member banks, via tens of millions of daily transactions (Curry, 2022. p.1). Pushing to remove Russia from SWIFT network was not part of the sanctions announced by the Biden Administration on Thursday (Curry, 2022. p.1).

### ***Recommendations***

By ensuring that local voices are heard, knowledge is explored, and the process is perceived as more transparent, giving users ownership in decisions that are taken (Tiller. et al, 2021. p.2). This development of a broad epistemic community or "community of shared knowledge" that compasses the key shareholders in a given issue and geographical area, is key to achieving global aspirations such as the SDGs (Tiller et al., 2021. p.2). Developing methods for facilitating comparative analysis between different countries, local communities and socio-economic regions is important to observe the proceedings toward reaching a global goal-made possible when epistemic communities are activated (Tiller, et al., 2021. p.2).

Epistemology is integrated to decipher fantasy from reality.

## **6. Recommendations for Future Research**

### ***Summary***

Finally, it is strongly suggested to upscale the process into a pilot-scale facility in which a comprehensive evaluation of water quality and energy parameters can be, done, facilitating a life cycle assessment and cost cycle

assessment of a hybrid process, which will give essential information on the direction that should be taken to develop robust low-cost water treatment hybrid systems to produce high-quality water (Linares, Vrouwenvelder, 2014. p.136). The author's wish is that you have found the study to be resourceful, consider its state-of-the-art research, and garner national and international recognition for the author's research endeavors. To be successful in the water project it is imperative to have transparency and implement the time-series approach which implements data points in a sequence of time.

A partner is desired as it is a playing field with disruptions and to be a dominant player a large force will need to be backing the project. When searching for a partner these questions should be included.

What projects have they completed in the past?

Where have they been done?

How big have they been?

Have they ever worked in the gulf?

Sensor information will assist in managing the problem effectively.

Any important links missing and if the strength of relations was correctly represented (Tiller et al., 2021. p.7).

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### Appendix A: Key Literature Review Search Terms

ADWEA (Abu Dhabi Electricity and Water Authority). ADWEA formulates policy for managing supply and demand of power and water in the Emirate, appointing the management of ADWEC and Transco, and managing the tendering of contracts to the private sector to supply power and water (Power Technology, 2022).

Arab Fund for Economic and Social Development (AFESD)

United Arab Emirates (UAE)

Reverse Osmosis (RO)

AI Ain Distribution Company (AADC)

Crown Prince Muhammad bin Salman (MBS)

Emirates Global Aluminum (EGA)  
Dubai Municipality (DM)  
Dubai Nuclear Energy Committee (DNEC)  
French Development Agency (AFD)  
Foreign Direct Investment (FDI)  
Global Water Intelligence (GWI)  
Gulf Cooperation Council (GCC)  
Joint Comprehensive Plan of Action (JCPOA)  
Renter State Theory (RST)  
Roads and Transport Authority (RTA)  
Sea Water Reverse Osmosis (SWRO)  
The Middle East Desalination Research Center (MEDRC)  
The OPEL Fund for International Development (OFID)  
International Development Association (IDA)  
International Groundwater Resources Assessment Centre (IGRAC)  
Kuwait National Petroleum Company (KNPC)  
Kuwait Oil Tanker Company  
Kuwait Petroleum International  
Petrochemical Industries Company (PIC)  
Program (UNDP)  
United Arab Emirates (UAE)  
The Gulf Cooperation Council (GCC)  
The Research Council (TRC)  
The World Bank- (WBG)

#### Partnerships

Aby Dhabi Aviation  
Abu Dhabi Investment Authority  
Abu Dhabi Aviation Company  
Agriculture Bank of China  
Arab Times  
Asian Development  
Bank  
Barclay's  
Barrons  
Biography  
Botswana Pula Fund  
Channel  
Chile Pension  
China Canada

China Investment Corporation  
Croatia  
Delft  
Disney  
Emirates  
Fly Dubai  
King Fahd University of Petroleum and Minerals  
Kuwait Investment Authority  
Lifetime  
LMN  
Dhahran....Techno Valley Company  
Earth Observation Data Acquisition and Analysis Service (NEODAAS)  
Environmental Process Engineering Team  
Future Generations Fund  
FYI  
Geological Research Authority of Sudan (GRAS)  
Green and Safe Health Facility Development  
Hearst Corporation  
Israel  
Jongno-gu  
Jordon  
King Abdullah University of Science and Technology  
Kuwait Investment Board  
Kuwait Investment Authority, Kuwait  
Kuwait Petroleum Company  
Libyan Investment Authority  
Mubadala Investment  
Republic of Korea  
Sama Foreign Holdings, Saudi Arabia  
State General Reserve Fund, Oman  
The Netherlands  
The World Economic Forums  
GS Engineering & Construction  
International Business Council  
National Human Rights Committee  
Kingdom Natural Environment  
King Abdullah University of Science Technology  
Ministry of Foreign Affairs  
Research Council  
Massachusetts Institute of Technology  
Advisory Board JP Morgan International Council  
Department of Biotechnology

Energies de Portugal  
Faculty of Applied Sciences  
Japanese Oil Refiner Cosmo Oil  
Member Society of Petroleum Engineers SPE  
Medium Resolution Imaging  
National Bank of Abu Dhabi  
Norway Government Pension  
Spectrometer (MERIS)  
Moderate Resolution Imaging Spectroradiometer (MODIS)  
SeaViewing Wide Field-of-View Sensor (SeaWiFS)  
SUE'S Lifetime Achievement Award  
Saudi Arabia Delft University of Technology  
Saudi Aramco Austin Petrochemicals  
Sovereign Wealth Fund Institute  
King Fahd University of Petroleum and Minerals in Dhahran  
Planning and Statistics Authority  
The Foreign Holdings of the Saudi Arabian Monetary Agency  
The General Reserve  
UN Department of Economic and Social Affairs  
United Nations Department of Economic and Social Affairs  
United Nations Development  
Australian Research Council  
German Science Foundation  
Clusters of Excellence—CLiSAP, Ciccs, Exc2037  
Olympics  
The History  
Thuwal  
Qatar Investment Authority, Qatar  
The Kuwait Investment Authority  
Vice TV  
Vietnam Ministry  
Volkswagen  
Visible Infrared Imaging Radiometer Suite (VIIRS)  
Water Desalination  
And Reuse Center

Contributors  
Denmark, Netherlands, Norway, France, Israel, Finland, Croatia, Portugal, United Kingdom, Australia, Sweden, Emirates, and the United States.  
West Bank

## Appendix B: Study Instruments

**November 30, 2021**

Dear Ms. Roessler Weinert,

Thank you for writing to me about U.S. foreign policy. I appreciate the time you took to write, and I welcome the opportunity to respond.

The challenges facing our world today demonstrate how interconnected we are and how the fates of all people are bound up together. The outbreak of a virus overseas can cause profound grief and suffer at home. Conflict a continent away can create unrest that endangers our security. Economic downturns abroad can mean lost jobs and shuttered businesses in towns across America. Global climate change is already worsening hurricanes in the Gulf, floods in the heartland, and wildfires in the West. No country can solve these problems alone, and America cannot afford to be absent from the world stage. Investing in strengthening our leadership abroad is also an investment in bolstering our security and prosperity at home.

As President, I am determined to repair our alliances, renew our leadership in international institutions, reclaim our credibility, and equip the American middle class to succeed in a global economy. I strongly believe that our Nation is better positioned than any other to lead in the 21st century and to be the greatest force for good in the world. Under my Administration, American political and economic leadership will be rooted in our most cherished values: defending freedom, championing opportunity, upholding universal rights, respecting the rule of law, and treating every person with dignity.

We have returned diplomacy to the center of our foreign policy and are committed to meeting today's global challenges from a position of strength, working in close cooperation with our allies and partners. I also want to be clear that I will never hesitate to defend the American people or our vital interests, including through the use of force when necessary. We will always stand with our friends around the world to protect our values and to advance peace, security, and prosperity for all.

I appreciate you sharing your views with me, and I will keep your perspective on these important issues in mind as we work to meet the challenges of our time. May God bless America, and may God protect our troops, our diplomats, our development experts, and all those serving in harm's way.

Sincerely,

Joe Biden

*(President Biden, 2021).*

## Appendix C

Statement - Published By EWEC and approved by the Abu Dhabi Department of Energy (DOE) (Department of the Environment) (EWEC, 2022. p.1). Ottoman AL Ali, Chief Executive Officer of EWEC, said: "At the core of EWEC's business is sustainable, efficient water and electricity production as we continue to ensure supply security,

and the Statement of Future Capacity Requirements Summary Report is a key reference for the likely future of water and electricity requirements (EWEC, 2022.p.1). Combined with the addition of nuclear power to the grid, we can significantly reduce carbon emissions and make the UAE a beacon for sustainable, utility-scale water and energy production.” (EWEC, 2022. p.1).

Increased investment in RO projects means we can lead the region in decoupling water and electricity generation, using significantly less energy-intensive technology to produce water, reduce carbon emissions, and reduce costs.” (EWEC, 2022. p.1).

#### ***Appendix D***

Marubeni Corporation has entered into a Power Purchase Agreement for Fujairah F3 Independent Power Project in the United Arab Emirates (Marubeni, 2020. p.1). Marubeni Corporation (hereinafter, “Marubeni”) is pleased to announce that Marubeni has signed a Power Purchase Agreement (hereinafter, “PPA”) with Emirates Water and Electricity Company (hereinafter, “EWEC”), a leading company in the coordination, planning, and supply of water and electricity across the United Arab Emirates (hereinafter, “UAE”), for the Fujairah F3 Independent Power Project, to be located in Qidfa, in the Emirate of Fujairah, in the UAE, (Marubeni, 2020.p.1). The PPA is contracted for 25 years (Marubeni, 2020. p.1).

Mr. Othman AL Ali, Chief Executive Officer of EWEC, said: “The Fujairah F3 IPP project will apply one of the most efficient and advanced CCGT technologies available in the region, producing more energy that aligns with the UAE Energy Strategy 2050’s CO<sub>2</sub> emissions reduction targets” (Marubeni, 2020. p.1). Marubeni has IPP projects assets with more than 125GW net generation capacity across 19 countries (Marubeni, 2020. p.1). Marubeni will continue to deploy its expertise and experience in the power generation business, and at the same time contribute to the establishment of a sustainable society by providing reliable sources of power that are also environmentally friendly (Marubeni, 2020. p.1).

#### ***Appendix E***

To provide secure, safe, and reliable supplies of water and electricity and to encourage private sector investment, in early 1998, ADWEA (now TAQA) embarked on the privatization of the water and power industry (SAPCO, 2022. p.1). The privatization program will encourage private sector investment, create new employment opportunities, accelerate economic and social development (SAPCO, 2022. p.1). This S3 Power Plant is operated by Shuweihit Asia O&M Company which is a 55%: 45% joint venture by Korea Electric Power Corporation of Korea and Sumitomo Corporation of Japan respectfully (SAPCO, 2022. p.1).

#### ***Appendix F***

##### ***Russia’s Military Hit***

Russia is an example of how unforeseen issues can have a devastating effect on the outcome of projects. The Task Force Team, has informed me of serious issues blocking travel to Russia. The unprovoked and unjustified attack by Russian military forces of Ukraine, the potential for harassment against U.S. citizen by Russian government security officials, the Embassy’s limited ability to assist U.S. citizens in Russia, COVID-19 and related entry

restrictions, terrorism, limited flights into and out of Russia , and the arbitrary enforcement of local law (Russian Task Force, 2022. p.1). The Russian Embassy is limited in helping U.S. citizens, conditions, including transportation that could change suddenly (Russian Task Force, 2022. p.1). U.S. citizens should note that some credit and debit cards may be declined as a result of sanctions imposed on Russian banks (Russian Task Force, 2022. p.1). U.S. citizens should make an alternative plan for access to money and finances of remaining in Russia (Russian Task Force, 2022. P.1).

Numerous countries have closed their airspace (Russian Task Force, 2022. p.1). Flights remain available, for example, through Middle East transit points on major airlines including Qatar Airways Gulf Air, Emirates and Etihad (Russian Task Force, 2022. p.1).

Enclosed email

U.S. Embassy Moscow, Russia

### ***Appendix G***

#### ***Branching Structure***

Siren De and Global Networking, are seeking funding from the Middle East to provide drinking water extracted from seawater (Geschwing, 2022). The project will have three phases; the first phase will be a feasibility study to look at alternative methods to desalinate water and distribute the drinking water either in bulk or through a local distribution system; the second phase will be to build a prototype to determine if the preferred system meets the engineering criteria for cost and efficiency, the third phase will be to build a full-scale system in one of the countries on the Arabian peninsula (Geschwing, 2022). To start this effort, we are seeking an architectural and engineering firm with a background in water purification to work with us on the first stage of the program (Geschwig, 2022).

After selecting the architectural and engineering firm for the first phase of the project, we will complete the funding for the project from our initial investor and other in Dubai or the UAE (Geschwig, 2022). When the first two stages of this program have been completed successfully, we envision that the system can be scaled to be placed anywhere there is a need for fresh water and accessibility to large quantities of salt water, such as the Red Sea (Geschwig, 2022).